THE
MEDICAL AND SURGICAL
REPORTER.

No. 2014. SATURDAY, OCTOBER 12, 1895. VOL. LXXIII—No. 15

ORIGINAL ARTICLES.

RESPIRATION, SUFFOCATION AND RESUSCITATION.*

THE MAIN PHYSIOLOGICAL FACTORS WHICH PLAY THE RÔLE IN RESPIRATION, SUFFOCATION AND RESUSCITATION, AND THE AUTHOR'S METHOD OF PNEUMATIC ARTIFICIAL RESPIRATION.

J. MOUNT BLEYER, M.D., F. R. A. M. S. (NAPLES, ITALY),† NEW YORK CITY.

We have a number of different modes of artificial methods of respiration at our disposal, each having its special feature recommending it, and bearing the names of such men as Sylvester Hall, Fells, Laborde and a few others. All these are generally known, so no recapitulation of them need be given. In this paper I give the world a new and original method which is here explained and is destined to bear my name.

The pneumatic artificial method of respiration is founded on the physiological principal of establishing a rythmatical breathing, which is carried out by means of, viz.: 1. Tubing the glottis. 2. Connecting the tube with an air tank filled up either with nature's diluted oxygen (plain atmospheric air), oxygen gas, or with a bellows if either is not at hand. 3. The expiration is performed by allowing the expired gases to flow off by a special valvular opening, working automatically as the rhythm of respiration occurs. 4. Air is forced into the lungs by the different graded pressures contained in the receivers and controlled by a special pressure controller. 5. Forced respiration and expiration is under perfect command of the operator. 6. The method can be put into action in a few seconds of time and continued without detriment to the partially electrified, drowned, suffocated, etc., for hours at a time. 7. Any one with small amount of intelligence can perform the operation.

Giving this outline of explanations of what is to follow in detail, one can at

*Original communication to the Academia de Ciencias Medicas, Fisicas Y Naturales de la Habana, 1895.

†Laryngologist to the German West-Side Clinic; Membre de la Societe Francaise de Otologie de Laryngologie et de Rhinologie, Paris; Membre National Academy of Medicine, Mexico; Membre de la Societe Francaise D' Electrotherapie, Paris; Member of the American Medical Association, Member Pedro Escohedo, Mexico, etc.

once form his own opinion of the importance of a complete physiological method of breathing by proxy for a subject that received a non-lethal accidental dose of electricity, or became asphyxiated from gas, drowning, opium poisoning, ether, chloroform and many other causes where the main treatment remains the keeping up of suspended respiration.

This method of carrying out rythmatical breathing by means of catheters and rubber tubing has been employed by me since 1888 in connection with operative work about the larynx, mouth and nose. A report of these proceedings was read before the American Medical Association, section laryngology, June, 1890: "The Value of Intubation of the Larynx in Connection with Other Operations, Etc." In May, 1893, by this method, with Dr. M. M. Weill, I saved the lives of three persons from illuminating gas after 13 hours' exposure. The *Therapist* for November, 1893, contains a description of the procedure at that time and clinical notes of these cases. Since then the apparatus has evoluted from several models of mine into a more complete mechanical construction.

As others have trespassed on my method and mechanical construction of this tube without giving me credit for the same, I am forced, openly, to claim my priority for all methods of artificial respiration in which the glottis is tubed for the purpose of resuscitating individuals after that manner. Several have since then laid claim to similar apparatus, when practically they were planned on tubing the glottis. I find that Dr. O'Dwyer has followed me also by one designed on principles of my own, and calls it *artificial forcible* respiration, which bears his name, but under the above claim and dates I am the first to have made the use of tubing of the glottis for carrying out direct artificial respiration in asphyxiation, from whatever cause.

Leaving all this to be judged by my peers regarding the equity of my claims and value of my method added to those already in vogue, I go on with the subject matter before me.

The points of procedure in performing artificial respiration by this method are in short as follows: Any one who has ever performed the passing of an œsophogeal sound or feeding tube can without difficulty pass the instrument into the vault of the larynx. The main features to be kept in mind are these: The patient is made comfortable on a flat table or floor, and all dress apparel about neck, chest and abdomen must be removed. The head is placed into a narcosis position and kept in that way as long as the operation is being carried out. Sometimes it is well to pass the tube in a sitting posture until it is piloted into the larynx. This choice of position remains as choice to the operator. When once the apparatus has reached the larynx, as it is nearly at right angles with the chest, keep the head extended during artificial respiration and the body recumbent. Once the tube passed it can be most easily controlled throughout without any difficulty for hours. The entire apparatus is made ready by attaching the tubing to the air tank, and from thence to the tube handle or bellows in a moment. All attachments are arranged with bayonet joints. A gage is placed in the angle of the mouth. The special size tube can be selected according to age and size of larynx. The expiratory valve must remain open while tubation is being performed until it is passed, then closed by lifting the finger off and the air allowed to pass through the inspiratory valve. When all is done a perfect rhythm of expiration and inspiration can be performed according to the will of the operator.

Once all connections are made from cylinder to tube, or from bellows to tube, time does not play any role. Hours can be given to it without tiring the operator. After once the respirations are started, make the rhythms from 10 to 15 minute. This should be continued until patient begins to show physiological efforts.

The tubes are so appointed that they allow no inspiratory or expiratory air to pass out between any space in the larynx or vault while in position. They assume a shape to fill up the entire larynx. This is important, so that air flows directly into the lungs and is there diffused and taken up by the tubes, air cells, etc. The handle to which the tube is attached must always remain in

the hands of the operator, and so controlled by him according to his judgment. The right hand controls the handle and tube, and the left the valve from the air tank. Both hands are made to act in exact rhythm and time of inspiration and expiration.

The life-saving value of artificial respiration cannot be doubted for a moment by any one well informed upon its teeming literature and in the practice of medicine. This has been demonstrated to us on many an occasion. If we picture some of the many thousands of narratives which have been printed in our dailies, saying nothing of those in medical reports of the varying cases that we have been confronted with, we would be amply repaid for the struggle we undertook in saving souls from going to an untimely and perhaps a regretted end. Every day physicians meet with cases which have a history to tell or a pent-up skeleton hidden, and if they could be guided over a certain period of time, a possible suicide sometimes, if recovered from the jaws of an impending death by such means in our power, would no doubt lead such a one to happier days. There are many causes for these self-robbers of life, and no one can appreciate these morbid morals until he has riden such a road from which end but few return to tell the tale.

Such accidental and intentional suicides we are brought face to face with daily, in which artificial respiration is the only remedy which must and can be employed to stay the last sparks of an ebbing life. In those who have gone beyond the pale of human sagacity, we know who has thus suddenly arrested the wondrous mechanism, and in the place of palpitating, vigorous beings, leaves them silent corpses. The cause seems so trifling that we can only marvel at its importance when revealed in the effect; it is the same in all such cases, in spite of the difference of the means, that which kills one kills the other; the fumes of gas, the opium, the rushing waters, accidental contact with electrical currents, of which a few cases are recorded which have survived when artificial respiration was resorted to and such same means interrupted the exchange of a small quantity of gases, and by preventing the blood from getting rid of its carbonic acid, in exchange for an equivalent of oxygen, the fervid wheels of life were suddenly arrested. It is the same cause acting with milder force which makes the faces pale of those who issue from a crowded church, and gives a languor to those who have sat for some hours in a theatre, concert room and any other ill-ventilated apartment in which human beings have been exhaling carbonic acid and other material from their lungs. A breath of fresh air quickly restores them, and after breathing this fresh air during a walk home they scarcely feel any evil results of the late partial suffocation. So, if in certain of those accidental and intentional cases artificial respiration could be employed in time, the chances for recovery would have been in their favor, as our concert-goers are restored by the first few whiffs of nature's diluted oxygen.

Among the earliest experiences of mankind must have been the necessity of fresh air for the continuance of life; but the complete explanation of the fact, in all its details, is a scientific problem, the solution of which only began to be possible when Priestley discovered the gases of which the air is composed and the relation these bear to the organism. Nor is the problem even now entirely solved, in spite of the labors of so many illustrious men. We have learned much and learned it accurately, but the difficulties which still baffle us are many and considerable. The ancients really knew nothing of this subject, nor did the men of the sixteenth and seventeenth centuries lay any solid foundation stone. That was laid by Priestley when he discovered the oxygen contained in atmospheric air to posses the property of converting venous into arterial blood. Lavoisier carried out this discovery, and founded the chemical theory of respiration. Goodwyn (1788) applied the new views to asphyxia, showing by a series of experiments that when air was excluded venous blood remained unchanged, and when it remained unchanged death inevitably followed. Bichat instituted a number of striking experiments to prove that an intimate relation existed between respiration, circulation, and the nervous action. He showed how access

of venous blood to the brain stopped its action, and subsequently stopped the action of the heart. Legallois extended these observations to the spinal chord. But by far the most brilliant investigations on the subject of respiration are those of Spallanzani, whose Memoires still deserve a careful study, both as models of scientific research, and as storehouses of valuable facts. He was succeeded by W. F. Edwards, whose Influence des Agens Physiques sur la Vie remains one of science's monuments, and of which it can boast as one of its best works. During the present century hundreds of physiologists have devoted labor to the elucidation of the various difficulties which darken this subject, and a vast accession of valuable facts has been cleared up which we may now endeavor to exhibit.*

And, first, let us ask, what is respiration? A question which many may regard as idle; yet, until it is answered in something like a definite manner, we shall find our inquiries constantly obstructed. Reduced to its simplest elements, respiration appears to be nothing more than the interchange between the blood and the atmosphere of carbonic acid and oxygen (how much the new element, argon, has to do with it is still a question to be thought out). But, although this is the simple formula to which analysis of the process conducts us, we shall be led into important errors if we see in it the whole of the process. It is the *physical fact* upon which the vital process depends, but it is not the vital function itself. This interchange is effected by every tissue, even when separated from the organism. They all absorb oxygen in its diluted and compound state, and exhale carbonic acid. A fragment of muscle, so long as it retains its irritability, is found to absorb oxygen from the air and to exhale carbonic acid; but we do not call such interchange respiration, because respiration is something more than a mere exchange of gases; it is an animal function, which, although dependent on the physical laws of gaseous interchange, derives its special character from the organism in which it is effected. In the course of an inquiry we shall have occasion to observe how the neglect of the distinction now insisted on between respiration as the function of an apparatus of organs, and respiration as the mere interchange of gases, determined by physical laws, has led to error; for the present, it is enough to have drawn attention to the true physiological conception. In the higher animals we see this function performed by two different organs—gills and lungs. In both organs we find that a large quantity of blood is exposed to the air by means of a network of vessels spread over the surface. The blood arrives there black and passes away scarlet. It has exchanged some of its carbonic acid for some of the oxygen of the air; it has become changed from venous into arterial blood. This oxygenation of the blood is, therefore, the special office of respiration; and although all animals exhale carbonic acid and absorb oxygen—although every tissue does so—yet we must vigorously limit the idea of respiration, as an animal function, to that which takes place in the gills or lungs. True it is, that the simple animals effect such exhalation and absorption by their *general surface*, and not by any *special modification of it*, such as gills or lungs; true it is, that even fish and reptiles, furnished with gills, also respire by their skin, and that when the lungs of a frog are removed, the necessary oxygenation of the blood may be effected through the skin if the temperature be low; nay, it is also true, that even man himself, in a slight degree, respires by the skin, one-fiftieth to one-fortieth part of the entire function, so that the tracing spreads the gradual complication of the organic apparatus, and finding *first*, the whole of the general surface effecting the aeration needed; secondly, a part of the surface formed into a gill, in which aeration is far more active; and, finally, finding this gill replaced by a lung, we may be tempted to say: "If the aeration of the blood is the office of respiration, and if this is effected in some animals by the skin alone, in others by the skin and the gills, and in others principally by the lungs, but still

* In the following works will be found most of the facts cited or alluded to in this exposition: Spallanzani: Memoirs sur la Respiration; Edwards: De l'Influence des Agens Physiques sur la Vie: Claude Bernard: Le cons sur les Effects des Substances Toxiques; Milne Edwards: Le cons sur la Phys. et l'Anat. Comp. Lehman's Physiologische Chamie, and the Treatises on Physiology of Berard, Muller, Funke, Draper, etc.

in a slight degree also by the skin, how can it be pretended to establish a distinction, other than by a simple distinction of degree? How can it be expected to lay much stress on a verbal difference such as that between function and general property or tissue?"

In reply to this plausible objection we must observe that in science verbal distinctions are often extremely important; they keep attention alive to real though subtle distinctions. It is difficult to keep such distinctions, for, as Bacon says, "words are generally framed and applied according to the conception of the vulgar, and draw lines of separation according to such differences as the vulgar can follow; and when a more acute intellect, or a more diligent observation tries to introduce a better distinction, words rebel." In strict physiological language, no animal without blood ought to be said to breathe, for respiration in such animals is not effected by a special apparatus of breathing organs; and in physiology the idea of function is inseparably connected with that of organ, as the act is with its agent. Professor Berard says that, penetrated with the idea of a special organ being necessary for respiration, he experienced a singular disappointment in reading the experiments of Spallanzani, which proved that every tissue of the body absorbed oxygen and gave out carbonic acid; and he "only recovered his contentment on perceiving that the essence of respiration consisted in this interchange of gases, so that, whatever nutritive fluid was in contact with the atmosphere, respiration must take place." Here the Professor seems to have made an oversight, confounding the general with the particular as completely as if a savage visiting a civilized country and observing the transport of men and goods by railways, and "penetrated with the idea of a special method of transit being necessary," were afterwards to observe that vans, carts and wheelbarrows also conveyed goods, from which he would conclude that the essence of transport bring the removal of goods from one place to another, every means of transport must be a railway. The interchange of gases, like the transport of goods, may be effected by various means, but we only call the one respiration when it is effected by gills or lungs, and the other railway transit when it is effected by railways. Professor Berard was right in conceiving that a special organ was necessary for respiration; and his error arose from confounding the action of the organ with the result of that action. Respiration effects the interchange of gases and the aeration of the blood, by means of a peculiar organic apparatus, without which the due aeration would not take place in the higher animals. In the simpler animals this apparatus is not needed, because the nutritive fluid, being easily accessible, requires no function to bring it into contact with the air; but no sooner does the organism become so complex that a direct aeration of the nutritive fluid ceases to be possible, than an apparatus is constructed, the function of which is to effect this aeration. In the gills and lungs we see such an apparatus. Unless distinctions like these are established, Respiration ceases altogether to be a vital process; and every interchange of carbonic acid and and oxygen, no matter where effected, will have an equal claim to be designated as a respiratory act. Therefore, as it is of the first importance in all physiological inquiries to keep constantly in view the part played by the organism in modifying physical laws, the philosophic reader will see at once that any verbal distinction which aids us in this must be of advantage. We should, perhaps, do well to indicate the special distinctions by using phrases such as "pulmonary respiration," "bronchial respiration" and "cutaneous respiration," for the various classes of animals.

If now we ask, What is respiration? the answer will be this: The function of the lungs or gills by means of which the blood absorbs oxygen, and parts with carbonic acid and some other noxious elements. Oxygen is the great inciter of vital changes; its presence is the indispensable condition of life. It is at once fuel and flame; it feeds and it destroys. Constantly withdrawn from the blood by the ceaseless activities of vital change, it is as constantly drawn into the blood by the process of respiration. If the blood rushing through our lungs does not meet there with a supply

of oxygen, the torrent carries venous in lieu of arterial blood to the tissues, and the consequence is an arrest of all the vital changes. If in passing through the lungs the blood only meets with a small supply of oxygen, an imperfectly arterialized fluid is carried to the tissues, and a partial arrest takes place, which is seen in the diminished vigor of the organism. All the functions are depressed; and if this depression continues death arrives.

An organism and a medium—these are the two factors in the sum; yet, strangely enough, in trying to solve the problem of respiration, men have principally directed their attention to one factor, the medium, forgetting the equally important influence of the organism. What is the medium? It is an atmospheric ocean 45 miles in depth, whirling with our planet while that planet whirls around the sun, subject to incessant fluctuations, yet always preserving the same composition. This atmosphere is chiefly composed of a mechanical mixture of two gases—oxygen, which forms about one-fifth, and nitrogen, which forms nearly the remaining four-fifths. To these must be added $\frac{1}{2000}$ of carbonic acid, with a small quantity of ozone and a definite amount of argon—which is not yet known—and traces of ammonia, etc. Such being the medium, let us now glance at the organism. Here there is nothing constant; not only are all animals different, and, consequently, their action on the atmosphere is different, but the same organism varies at different periods. As a general fact, the action of the animal organism may be succinctly stated to be the absorption of oxygen from the atmosphere, and the exhalation of carbonic acid into it. It matters not whether the animal lives in air or in water—the respiratory medium is always the air, for water, deprived of its air, or its due proportion of oxygen, is as fatal to marine as to terrestrial animals. It matters not by what organ or surface the respiratory exchange takes place, it is always a twofold act of exhalation of carbonic acid on the one hand, and of absorption of oxygen on the other. The variety of respiratory organs is great. In the Mollusks we find some kinds having no "organs" at all; some kinds having gills; others having lungs, and one kind (Oncidium) having both gills and lungs. In the Crustacea we find rudimentary gills. In spiders there are both gills and lungs. Fish have only gills. Frogs and salamanders begin with gills, which disappear and give place to lungs. Reptiles, birds and mammals have lungs of different degree of complexity. Cutaneous respiration is effected when the air, either in the water or as atmospheric air, comes in contact with the moist skin in which the blood is circulating. Gill respiration is effected in a similar way; the water rushing over the delicate surface, parts with oxygen, and takes up carbonic acid. In pulmonary respiration the air is no longer outside, but inside, the organ; it is drawn in from the atmosphere; the exchange is effected in the organ, and the altered air is then driven out, to be replaced by fresh air.

To understand the mechanism of pulmonary respirations, let us commence with an examination of the newt (Triton), which presents us with the simplest form of the lung, and will, therefore, best enable us to understand the more complex forms. On opening the chest of this newt, recently caught from a neighboring pond, we observe two elongated air sacs of thin membrane; these are the lungs. We remove one sac and find an artery with its ramifications rushing down one side, and a vein running up the other. Into this sac the air enters by the windpipe; when there, it is in contact with the delicate blood vessels lying in the membraneous wall; the exchange of gases takes place and the vitiated air is expelled by a contraction of the abdominal muscles; as you may see by observing the live animal in a glass vessel. The reptile's lung is thus an air sac, on the surface of which blood vessels are distributed; and, if we now examine the lung of a man, we shall find that, in spite of its apparently different structure, it is a little more than an almost endless repetition, on a smaller scale, of this very air sac. The windpipe, instead of simply dividing into two branches, each branch terminated by a large air sac, divides and subdivides like the branches and twigs of a tree; these tubes are called the *bronchial tubes*; each tubelet terminates in a cell, forming, as

Kölliker justly says, the miniature representation of a reptile's lung. The lung of a man is thus an aggregation of bronchial tubelets and air sacs; these air cells are very minute, sometimes the two-hundredths of an inch, occasionally the seventieth of an inch. Between these air cells run the capillary blood vessels. Thus each side of a blood vessel is exposed to the air contained within a call, and the gases pass to and fro the delicate wall of the cells, and through the walls of the capillaries with perfect facility. So crowded are the blood vessels that the diameter of the meshes formed by their network, is less than the three thousandths of an inch, and the number of air cells is calculated at not less than 600,000,000.

With this brief description of the organ, let us pass on to the function.

[TO BE CONTINUED.]

COMMUNICATIONS.

HOW TO DIAGNOSTICATE SEXUAL DERANGEMENTS IN THE MALE.*

EUGENE FULLER, M.D., NEW YORK.

It has been my endeavor for some time past to impress on the profession the fact that, in the majority of instances, sexual derangements in the male are caused by pathological processes located in or about the seminal vesicles, and, further, that such pathological processes accomplish their results by interfering with the active function of the seminal vesicles, namely: the mechanism of ejaculation. This side of the question—which is, in fact, the most important side, since it represents a majority of the cases—is the only one which has so far received but little attention, while psychological conditions in which sexual derangements exist only as symptoms, have been so thoroughly and extensively written up that most practitioners instinctively think of the mind as the seat of trouble whenever consulted by an individual of this class. It is true that mental symptoms exist in most instances wherein also there are sexual derangements of long standing, but usually these mental symptoms are secondary to and dependent on disease located in the seminal vesicles, rather than on a primary mental dyscrasia. Thus it is that many a patient is seen suffering really from seminal vesicular disease, who, as a result of visiting doctor after doctor, has been discouraged rather than benefited by being told he was a crank, a hypo-chondriac, or that his sexual functions were all right if he could only induce himself so to believe, while at the same time drugs destined to quiet the mental state have been unavailingly prescribed.

Sexual derangements in the male should be diagnostically arranged in four classes:

(1) Those dependent on seminal vesiculitis.
(2) Those dependent on neuroses.
(3) Those dependent on primary mental disease or degeneration.
(4) Those dependent on general malnutrition and debility.

The order of this classification corresponds to the frequency with which these different forms of disease are encountered in practice.

In explanation of the first class of causes I will here say little, since the subject has been so fully considered in my book, just published ("Disorders of the Male Sexual Organs," Lea Brothers & Co., Philadelphia, 1895). Other than that where seminal vesiculitis exists, one usually obtains from the history of the case an account of previous urethral or

*Read before the Mississippi Valley Medical Association at the meeting held in Detroit, September, 1895.

bladder inflammations, sexual abuses or excesses and the like, all of which are agents tending to produce localized inflammation. This class also is the only one which presents tangible physical signs; for in seminal vesiculitis the practiced finger inserted in the rectum can positively diagnosticate the disease from the indications presented to the sense of touch.

The second class of causes, namely, neuroses, commonly occasion what we are accustomed to designate as functional impotence. In such cases the sexual organs, which are in themselves in a state of health, are more or less constantly inhibited in their action by some reflex nervous cause. Rarely, instead of being inhibited by the remote cause, the sexual center may be excited and occasionally the periods of inhibition and excitement may alternate with more or less regularity. This condition is often seen in young men whom fear of contagion or bashfulness makes temporarily impotent. Aversion, dislike, or conscientious scruples may also effect the same result. Occasionally a wife's aversion or dislike of sexual intercourse may so react on the husband that he becomes impotent as regards her. Numerous cases have been recorded where stricture, varicocele, adherent prepuce, spinal inflammation or irritation, and various other conditions have acted as causes to inhibit the sexual center. It is in highly nervous states, best classed as male hysteria, that one is apt to encounter alternating conditions of inhibition and excitement.

The third class of causes properly belongs to the alienist. Under this heading are grouped the different forms and grades of paranoia, in which mental degenerations the sexual sense or desire exists in a perverted state. Natural forms of sexual gratification appeal but little, if at all, to those so affected, and with some of them coitus is impossible. Still, with such individuals there is no apparent loss of sexual strength and force whenever the special agents capable of exciting the sexual passions happen to exert their influence. In this mental class also belong idiots and feeble-minded individuals, who get all the sexual gratification they are capable of experiencing from masturbation, and in whom the opposite sex is incapable of arousing any erotic sensations.

The fourth class of causes is a small one, and is perhaps not deserving of a separate classification. Still, I have encountered cases, illustrated histories of which I have recorded in my book, which cannot well be grouped under the other three headings, and consequently I have made this fourth division. Individuals of this class are young or middle-aged. They make complaint that they are capable of little sexual exertion, and that feelings of prostration and exhaustion result whenever they attempt coitus. Examination shows the seminal vesicles to be normal. It also shows a weak circulation, perhaps from some congenital defect, deficient lung expansion, malnutrition generally, and defective intestinal assimilation. In fact, the sexual organs are found to be no weaker than the other organs, and whatever weakness they may have is evidently dependent on defective action in connection with the vital centers.

We now come directly to the clinical consideration. When an individual presents himself with a sexual complaint, he should first of all be allowed to state in his own words, as concisely as it is possible to make him, exactly what his troublesome symptoms are, how long he has had them, and what seems to aggravate or relieve them. His own idea also as to the origin of his complaint should be stated. The consultant should then ask a systematically arranged series of questions. These questions should be grouped according to the classification of causes which we have already enumerated. The first set of questions should accordingly seek to reveal whether any of the conditions had previously existed which are known to favor the production of seminal vesiculitis. With this end in view, he should be asked if he had ever had gonorrhea, how often he had had it, and what sort of a course it had generally run; also, whether he had ever had swoolen testicles. If he had had urethral treatment, he should be made to state its exact nature, together with the effect it may have had on his sexual disorders. His previous sexual habits should be inquired into in order to see whether they had been excessive or abusive; also

whether it had been customary to tease, as it were, the sexual center by exciting it unduly without subsequent natural relief. Questions relative to the existence of a phthisical tendency should then be asked, since it is not at all uncommon for such inflammatory processes to locate themselves in the seminal vesicles.

The next group of questions should be directed chiefly toward the nervous and mental status, the aim of the examiner being to discover whether the sexual desires, sensations, habits, etc., have been normal and natural. The general nervous condition of the patient should be inquired into, including his occupation and mode of life. The attempt should be made to discover whether there are other nervous phenomena or symptoms, aside from sexual ones, which have attracted attention or which have been a cause for complaint.

Then, lastly, the general health and vigor of the complainant should be investigated. He should be asked how much exercise he can take without exhaustion, and whether the state of his digestion is satisfactory.

After this questioning, it is probable that an examiner of experience might in the majority of instances be able to correctly diagnosticate a given case. Still, as yet a trial has not been made of the most important agent at our command for the settlement of the diagnosis, namely; the digital feel of the seminal vesicles per rectum. When so employed, the educated finger can detect not only the existence of seminal vesiculitis, but also the extent and in large measure the grade of the disease. If the presence of seminal vesiculitis has been determined by these means, then it is safe to assume, in case no marked mental sexual perversions have been found, that the sexual disorders complained of are dependent on the pathological condition of the seminal vesicles. If, however, marked perversions coexist, then it may be that the perversions, by reason of the excesses attendant on them, have caused the inflammation of the vesicles; but this is not always the case, as the writer has in mind an instance where the irritation caused by the seminal vesiculitis created a sexual perversion. Where such a complication seems to exist the only way to settle the question whether the mental sexual perversion is primary or secondary to the seminal vesiculitis is to effect a cure of the seminal vesiculitis. Then the sexual perversion, if it is a primary condition, will remain unaffected; otherwise it will of course disappear.

If the digital rectal feel shows the seminal vesicles to be normal, then the first and chief group of causes is eliminated, the three last being left. The next step for the examiner to take is to differentiate the second and fourth classification of causes from the third. This is usually not a difficult matter. If the mental faculties are found to be developed, and if there are no evidences of mental degeneration, such as is customary to include under paranoia, then the derangements complained of should be ascribed to some neurotic condition, or, possibly, to general malnutrition or debility. If mental disease or degeneration is found to exist, the sexual disorder should be ascribed to the mental condition.

It is hardly necessary to say anything regarding the differential diagnosis between the second and fourth class of causes other than that, if the patient shows marked evidences of malnutrition, together with a poor circulation, defective lung expansion, etc., it is safer to ascribe his sexual weakness to a general weakness, which pertains to his sexual, in common with his other, organs, rather than to some neurotic condition.

If a case of sexual disorder is found to be due to some neurotic cause, then often-times considerable observation and study may be required before the medical attendant can determine just what the factor is which inhibits or excites the sexual nerve center. It is all-important, however, that this should be discovered, in order that remedial measures may be taken.

In conclusion, it may be well to devote some special remarks to the feel per rectum of the seminal vesicles. The patient to be examined, as I have already described, should stand with his legs straight and with his body bent forward at right angles to the direction of his legs. A forefinger of the operator, well lubricated, should then be inserted into the rectum, while counter pressure is exerted by the other hand against the

hypogastrium in order to bring the parts well into the reach of the tip of the forefinger. This manipulation is often made less difficult if the bladder of the patient be fairly distended. The conditions presented to the feel by the varying pathological states of the seminal vesicles are widely different. Thus, in the light grades of inflammation, the sacs may feel soft and distended, their walls being but slightly thickened. In more severe grades the walls appear thick, rigid, and inelastic; while in cases where the inflammatory process has been very severe, the surrounding loose fibrous tissues are invaded by a hard, infiltrating edema, which eventually becomes organized by connective-tissue proliferation. In these latter instances the vesicle appears to the feel as a hard lump, at times approaching in size a goose-egg. In case both vesicles are involved by such extensive perivesicular inflammation, then these two exudations may meet in the median line back of the prostate, thus filling in the whole post-prostatic connective-tissue space. Cases of this description always deceive a novice or a careless examiner, who diagnose them as hypertrophy or inflammation of the prostate.

A marked tenderness is always excited when pressure with the finger tip is exerted over an acutely inflamed seminal vesicle, but as the vesicles are also often very tender to the touch in many chronic conditions, tenderness cannot of itself be significant of an acute process. In acute seminal vesiculitis, besides finding the part very tender, the sense of touch should reveal a soft, boggy swelling, possessed of an increased amount of heat, and which in most instances can be felt to pulsate.

If, now, in a case of seminal vesiculitis, the finger tip, after reaching as far as possible into the rectum, is bent downward and then drawn slowly out along the line of the body of the seminal vesicle and its ejaculatory duct, more or less of the inflammatory contents of the sac is liable to be pressed out of the opening of the ejaculatory duct and into the deep urethra. The urine voided after this manipulation will contain the expressed material. This is my mode of stripping the seminal vesicle. Although it is of use in establishing a diagnosis by verifying, as it were, the sense of touch, still its chief value lies, as I have demonstrated, in its curative properties. Sometimes, especially on the occasion of a first stripping, it will be found that very little or nothing is expressed from a seminal vesicle which the touch shows to be extensively inflamed. This is often the case where the sac is embedded in a mass of schlerous perivesiculitis, which causes the walls of the seminal vesicle to remain rigid as the finger tip passes over them. In cases of this description, however, after the perivesicular thickening has gradually been absorbed and softened as the result of a series of strippings, then much pathological secretion can be expressed from the sac after each manipulation.

I have said earlier in this article that it is the educated finger which can detect disease located in the seminal vesicles. To become perfected in this rectal feel, the finger needs as much practice as does that of the gynecologist in feeling the ovaries and tubes. To give the finger the necessary practice and education, the genito-urinary surgeon should make it customary to examine in this manner every male case coming into his clinic, until all normal and pathological conditions can be fully appreciated.

Contra-Indicated During Pregnancy.

(*Journal American Medical Association*) Huguenin mentions as chief of the remedies which are dangerous to the pregnant woman, salicylate of soda and ergot. Purgatives—castor oil, mineral salts and especially aloes—should be avoided. Oxalic acid and its salts—oxalate of potash, etc.—may prove dangerous. Antipyrin frequently taken inhabits the lacteal secretion; cocain locally applied for fissured nipples has the same effect, and should be proscribed for nursing women. As to operative measures, they are not absolutely contra-indicated; we may, for example, extirpate a peri-uterine tumor, the development of which hinders pregnancy, provided the operation is speedy and little blood lost. Operations in the vagina or uterus, no matter how minor, should be avoided in order to avoid suspicions of abortion in the patient's mind.

ACTION OF CHLOROFORM IN PARTURITION.*

BEDFORD BROWN, M.D., ALEXANDRIA, VA.

The profession has come to regard the use of chloroform in parturition as almost utterly devoid of danger, and it is this opinion based upon substantial facts that has given rise to its universal and careless, even reckless administration in labor. Why chloroform acts differently in the parturient and pregnant female from the non-pregnant person, or why it is comparatively harmless in the pregnant and is attended with a certain degree of danger in the non-pregnant is a question not devoid of interest or importance. To be enabled to determine what there is in the physiology of pregnancy that protects the woman against the dangers of chloroform would be to ascertain and establish a fact in the therapusis of chloroform that would shed an infinite amount of light on its therapeutic action not only in labor, but from a surgical point of view.

During the process of pregnancy there are two systems which undergo manifest changes of a developmental order These are the vasomotor and circulatory systems.

The developmental changes in these two systems are of a phenomenal character. The muscular structure of the left ventricle takes on increased nutrition and growth, that it may have increased force and power to meet the new emergencies of circulation and nutrition. A new being is to be nourished, developed, formed, and shaped in all its parts, and to do this a new force is to be created. The heart of the pregnant female not only acquires additional force, but the great vasomotor and sympathetic systems, with their ganglia and nerves take on new energy, more vigorous action and power to maintain that complex circulation of both mother, the placenta and fetus. Just in proportion as the growth of the placenta and fetus increase, these developmental changes in the circulatory vasomotor system advance. Otherwise the pregnant woman would utterly fail to sustain her own strength and health, and at the same time nourish the placenta and fetus. Hence her vasomotor system and circulation reach a state of development in point of vigor, energy and power rarely attained in any human constitution.

Under these circumstances, arterial tension and blood pressure more than redoubled are indicated in the strong, vigorous, bounding and frequent pulse of the pregnant woman, which is familiar to all practical obstetricians. Such a state of arterial tension and blood pressure would be regarded in the non-pregnant as indicating a dangerous degree of plethora and congestive tendency. But in the pregnant woman we know there is a safety valve, a diverticulum for this increased circulatory force and volume found in the placental and fetal circulations.

Among the most interesting developmental processes of pregnancy is leucocytosis, a purely regenerative and restorative process. This seems to be the foundation upon which is constructed all other developmental functions of the vasomotor and circulatory systems, to enable them to bear the new duties and superadded labors of the emergencies of pregnancy and parturition. To what extent the immunity of the parturient female from the toxic action of chloroform is due to the restorative and sustaining process of leucocytosis can not be determined at present.

The process of pregnancy, the evolution and growth of the fetus require that every energy of the maternal system shall be bent singly to the accomplishment of those objects.

That the therapeutic action of chloroform in the parturient female differs widely from that in the non-pregnant person, there is abundant evidence to prove. We know that in surgical practice, chloroform anesthesia is attended with a certain proportion of mortality that renders extreme caution necessary, while a death or even unpleasant result in labor is a very rare occurrence from that cause.

*Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, May, 1895.

In the obstetrical practice of the civilized world, the most careful researches have only brought to light a very small number of cases of death in the millions of instances where chloroform is resorted to.

We may safely say that in the practice of the world there are twenty cases of parturition in which chloroform is resorted to, to one of surgery, and yet there is not the one-hundredth part of cases of mortality in the former as the latter. I do not think that this is an exaggerated statement. The most careful investigation has failed to find more than forty deaths from chloroform in labor, in the practice of the world, from the time that this anesthetic was brought into use to the present time. Some high authorities place the number at only three deaths. This is, I think, a wonderful exhibition, particularly when we take into consideration the careless, unscientific, reckless manner in which it is given during labor.

And not only this, but its often prolonged use during protracted labors. I have seen it given in protracted labors every half hour for twelve, and in certain cases for twenty-four hours, where there were not only no evil results, but labor terminated naturally and favorably. I have seen in cases of obstetrical operations the patient kept in a profound state of chloroform anesthesia for two and three hours without the least indication of collapse of the circulation or suspension of respiration.

In a long experience in the use of chloroform, extending over a period of nearly forty pears, I have yet to see my first case of the least evil result to mother or child. Yet I am opposed to its reckless and careless use in parturition and for fear that there might be an evil result, believe that the same scientific principles and careful method of giving it should guide us as in general surgery.

According to these statements, and I am convinced that they are sustained by the experience of the profession, pregnancy, particularly during the stage of parturition, does in a large degree render the woman immune from the evil effects of chloroform. This having been established as a fact in its therapeusis, it remains to be determined what is there in the state of pregnancy or parturition that gives the parturient patient this immunity.

The extraordinary development of the vasomotor and circulatory systems in the pregnant woman has been alluded to, with its wonderful arterial tension and high blood pressure. The pulse even of the most delicate pregnant woman is often as hard, full and strong as the most robust man. In a paper read last November before the Southern Surgical and Gynecological Association, on the action of chloroform on the exposed human brain, I showed very conclusively that the anesthetic action of chloroform on that organ was invariably to produce anemia of its circulation, reduction of arterial tension and diminution of blood pressure, so that always under full anesthesia the brain becomes anemic to a degree that in extreme cases there is an enormous and dangerous reduction of circulation preceding general collapse. I am therefore constrained to believe that in this wonderful development of force, strength and power of the pregnant woman in her vasomotor system lies her immunity from the toxic action of chloroform. Every degree acquired of additional strength in the vasomotor system gives her increased immunity. It is this newly acquired force of the vasomotor system of the pregnant woman which enables her to resist the toxic action of chloroform to an extraordinary extent, which prevents extreme depression of arterial tension, and consequently excessive and dangerous anemia of the brain and spinal cord.

In the cases alluded to, of extensive injury of the cranium and the brain in which, while chloroform was being used, I had a perfect ocular demonstration of its action on the functions of the brain during its administration of three or four times in each case, reduction of arterial tension, blood pressure and vasomotor force in the arteries invariably preceded a state of anemia of the brain, and this extreme anemia of the brain, suspension of pulsation and hemorrhage always preceded tendency to general collapse.

These facts, I think, indicate to us very clearly that in chloroform anesthesia, anemia of the brain to an extreme

degree always precedes dangerous chloroform narcosis and collapse, and, at the same time, that so long as the vasomotor force remains intact in sufficient force to sustain the circulation in the brain and medulla, life will be sustained.

In my experiments with chloroform in the cases cited of injury of the brain, there were two occasions in one, and one occasion in the other, on which there was alarming collapse, with almost entire suspension of respiration and cardiac action. Preceding these symptoms in every instance there was marked reduction of vasomotor force, arterial tension and blood pressure, and diminution of cardiac power. In all my experience in the use of chloroform in parturition, I have never witnessed this extreme reduction of cardiac and vasomotor force, no matter to what extent the agent was pushed, that I have in general surgery.

The primary action of chloroform is on the cortex of the brain, the seat of consciousness and sensation. For the relief of the pains of parturition, all we have to do is to bring the cortex under a state of anesthesia, without extending its influence so far as to involve the reflex functions of the cord. This is equally true of anesthesia of general surgery. By watching the action of the remedy we are enabled to confine its influence to the cortex without infringing on the functions of the cord or vasomotor system. This is all that is desired to relieve pain and to render the act of labor more comfortable and easy for our patient. On the contrary, if we desire to relax excessive rigidity of the soft parts, or in case of convulsive action, to control that, we must extend our anesthetic influence further, and bring under its power the reflex functions of the cord itself. So long as we confine our anesthetic to the cortex alone we cannot accomplish these objects. But immediately the cord is brought under its influence, complete muscular relaxation follows.

We will now consider the question of anesthesia in its practical bearing and influence on the process of parturition.

Is the use of chloroform in parturition justifiable for the relief of pain alone?

This is the first question that presents itself for our consideration. I believe that it is, but not in every case. For instance, there are cases where the pains are slight, the conditions all favorable, the passages spacious, the labor rapid, in which it is unnecessary. But in every case where the labor is at all slow, painful, and not easy, I believe that it is not only justifiable, but that it would be inhuman to withhold it. This statement is based upon the fact that the mortality from chloroform anesthesia in labor is so very small, not probably amounting to one in millions, we certainly can risk so little for so much good.

I know that there are those who oppose its use to parturition *in toto*, but I believe without good and just reasons.

Pain is the great terror to parturition and if it could be robbed of this feature alone it would be converted into a very simple and easy process. For some years before I adopted anesthesia in my obstetrical practice, I have time and again sat by the bedside of women in the throes of parturition and listened often with anguish to myself, to their cries for relief from pain, heard their moanings from almost insufferable agony, for hours of such scenes that impressed themselves upon my memory in a manner never to be forgotten. With chloroform at hand, and with my familiarity with its action, I never have to pass through such painful scenes now. I have tried in past years many substitutes for chloroform to relieve the pain of parturition, but have never found one yet. I am convinced that it is *the anesthetic* of all others peculiarly appropriate to the parturient state. It is clean in its action, does not cause congestion of either the brain, the lungs or kidneys, but markedly diminishes the tendency to congestion of the brain.

Does the action of chloroform facilitate the process of parturition?

I believe that, as a rule, it does. I am convinced that in a great majority of cases it does shorten the duration of parturition. I know that it is the opinion of some that its action is to reduce the strength of uterine contraction and in this way retard the process of parturition. It has been my experience that while it relieves pain, its use may be so graduated as to not impair uterine con-

traction. Acting on the cortex of the brain alone and on the reflex functions of the cord are two different things. Thus we can abolish sensation without affecting reflex action. I believe that with care and judgment we can confine the action of chloroform to the cortex alone, the seat of sensation, and leave intact the reflex functions and the contractive force of the uterus.

I have no statistics to guide me in this matter, but my personal experience in the administration of chloroform in parturition leads me to believe that it not only makes labor easier, but that in the average it shortens the duration of that process. If then, it is capable of rendering labor easier, more bearable to the patient, and can shorten its duration one hour, or even thirty minutes, its application is justifiable when we consider the very small risk incurred in giving it. In certain conditions I know that it can shorten the duration of labor. These conditions are rigidity of the soft parts, and irregular contraction of the uterine muscular fibers or spasmodic contraction of certain sets of fibres and relaxation of other sets; a condition that may protract labor indefinitely. The spasmodic contraction of certain muscular fibers of the uterus and relaxation of others is not an unfrequent state during protracted labor, and is a similar condition to that which produces the hour-glass contraction after labor. Chloroform is capable of equalizing uterine contraction and of preventing irregular spasmodic contraction, and in this way facilitating parturition.

Its well-known power to overcome and relax muscular rigidity no one can doubt. In illustration of this fact, I have repeatedly in my experience seen cases attended with rigidity of the soft parts where the process of labor was stationary, it might be for an hour or more, or even hours, but when chloroform was given in such quantities as to produce muscular relaxation, the labor would progress rapidly toward a termination.

At what stages of parturition is chloroform applicable?

To relieve excessive pain it is applicable at any stage. But to induce relaxation of muscular rigidity it is applicable in unusual rigidity of the os uteri, and in extreme rigidity of the perineum when the fetal head begins to press on that body. When the object of giving chloroform is to relieve pain only, it should be given in small quantities at the beginning of each pain and left off when the pain ceases. But when we desire to overcome muscular rigidity the patient must be subjected fully to its influence. In the case of extreme contraction of the os uteri, or great rigidity of the tissues of the pelvic floor, no half way procedure will accomplish anything. The patient then must be brought sufficiently under its influence to at least partially suspend reflex action when complete muscular relaxation follows, just as we would do in reducing a dislocation.

When there is perfect accommodation between uterine force and muscular relaxation in a normal pelvis, labor proceeds rapidly, easily and successfully. On the contrary, when this accommodation is disturbed, when, for instance, uterine contractile force is feeble, and perineal muscular tension is excessive, labor proceeds slowly and painfully. The action of chloroform in this class of cases is to bring this accommodation between uterine force and pelvic resistance to a more normal standard by reducing muscular tension. Leaving out of question congenital defects, or those caused by disease in the pelvic bones, the vast majority of tedious and difficult labor will be found to be due to rigidity of the muscular structures of the pelvis, or inefficiency of uterine contraction. We often see these conditions existing together. Nineteen out of twenty cases of instrumental delivery, in my personal experience, have been due to excessive muscular rigidity of perineum. In these particular cases the action of chloroform has been to cause perineal relaxation, to reduce muscular resistance, to bring about accommodation between force and resistance without materially impairing that force on the part of the uterus.

Does chloroform tend to suspend uterine contraction?

There can be no doubt that chloroform may be given in labor in a manner either to relieve pain and to leave uterine contractile force intact, or to both suppress pain and uterine rhythmic contraction so as to suspend parturition for a time.

Rhythmic uterine contraction is an essentially reflex function and we know that the different nervous functions come under the influence of chloroform in consecutive order—sensation first, then reflex action and finally vasomotor action. Because of this fact we can, as a rule, relieve the pains of labor without impairing the force of uterine contraction. All practical obstetricians have observed in patients in labor when under chloroform, entire relief from pain while, at the same time, the rhythmic contractions of the uterus, and all the symptoms of active tenesmus were in full operation. I believe that this is the ideal state of chloroform anesthesia, in labor, and I am convinced that it may be so administered always as to relieve pain and leave the reflex functions unimpaired. Again, I believe that the reflex functions of the parturient patient are far more resistant to the toxic action of chloroform than in ordinary cases, and that it is more difficult to suspend them. This fact gives us a decided advantage in giving chloroform in labor, simply to relieve pain without interrupting the progress of parturition.

In my experience it has been seen that when the uterine contractions have been for the time suspended by the too free use of chloroform, when this influence subsided, uterine contractile force returned with renewed and additional vigor to perform the work to be accomplished. Also there have been occasions in tedious cases of labor, when the pains were irregular and insufficient in character, causing much needless suffering to the patient, that when the patient was placed under full chloroform narcosis for a time and was made to enjoy a prolonged sleep, the pains were renewed with vigor and force sufficient to terminate the labor.

Does the action of chloroform tend to promote or prevent post-partum hemorrhage?

This constitutes one of the most important questions connected with the therapeutic action of chloroform in parturition. If it tends to promote hemorrhage then this fact increases the dangers of its use in this condition. From my personal experience I can say this much relative to this question. Many times after its administration in parturition, when pushed to the extent of causing entire unconsciousness at the time of birth, in not a single case have I observed a greater tendency to hemorrhage or any greater difficulty in producing firm uterine contraction than when it was not used.

So far as this question is concerned, I can speak alone from personal experience, and any personal experience in a large number of cases extending over a long term of years, is of some value in settling important questions. High authority on the action of chloroform on the circulation is that it is a vaso-motor contractor. In my surgical practice its action on the vessels rather tended to establish this view. Profound chloroform anesthesia certainly does diminish surgical hemorrhage. In my cases of injury of the skull and brain, under chloroform anesthesia there was a marked diminution of cerebral hemorrhage in every instance. Then if it be true that chloroform is a vasomotor contractor, this, it appears to me, would decide this important question.

Does the action of chloroform in parturition tend to prevent or promote laceration of the os uteri or perineum?

Are lacerations more common under the present method of delivery under anesthesia, or under the old system of delivery without anesthetics? I have no reliable statistical data bearing on this subject to guide me, but I will state here that I have practiced under both the old system and the new, and am enabled to state positively that all of the bad cases of laceration of os uteri and perineum have occurred in cases where chloroform was not given. Many of the worst cases of laceration of these organs occurred in cases of rapid birth before my arrival. I am decidedly of opinion that thorough relaxation of the structures of the pelvic floor constitutes the best security against injuries of this kind, and I know of no agent that is as capable of producing that extreme relaxation of muscular tissue as chloroform, and therefore placing the patient in a condition most favorable for the prevention of lacerations.

I will briefly cite the case of Mrs. T., a young married woman who had an accidental abortion at five month of pregnancy. I was called to her about eight

hours after and found her with a retained placenta. The perineum was intensely rigid and the ostium vaginæ closely contracted. The vagina was narrow and the os uteri was rigidly contracted on a protruding umbilical cord. I determined to place the patient thoroughly under the influence of chloroform, with the hope that it would produce sufficient relaxation of the soft parts to enable me to insert the fingers into the uterus and remove the retained placenta. While the patient was under the influence, to my surprise I found complete relaxation of the perineum, vagina and of uteri. These tissues were in such an extremely flaccid condition that I was enabled with perfect ease to pass my hand, not only into the vagina, but into the uterus, which was as equally flaccid, grasp the placenta, detatch it from its adhesions and remove it safely. Without the influence of chloroform this operation could not have been performed. During my past professional life I have had occasion to test all the various methods proposed by different authorities for the prevention of laceration of the perineum. I have found them more or less defective, some entirely unworthy. For some years past the method which I have adopted with the most satisfaction was to retract the perineum, with the fingers hooked into the vagina, back toward the rectum forcibly at each pain, so as to maintain a continuous relaxing influence of the perineum until the fetal head presses on that body. When it reaches that stage then the perineum will have been very generally relaxed. At this point the patient is kept under the influence of the anesthtic until the head begins to protrude from the vulva, when it is suspended. In my hands this mechanical dilatation of the perineum, combined with the relaxing influence of the anesthetic has been the means of preventing more lacerations than any other method that I have tried up to this this time.

In conclusion, I can truly say that after a long and favorable experience in the use of chloroform in parturition, that I have found it not only a blessing to the patient but to the physician also. Without the means of relieving human suffering what a dreary, unsatisfactory and repulsive life that of the physician would be. Yet for ages and ages the lot of the woman in the throes of parturition was to suffer, to bear, and submit to its terrible tortures, hopeless of relief until the end came.

For the past half century the achievements of medical science in the discovery and perfection of remedies to relieve human suffering, to improve human health, and prolong human life, have astounded the civilized world and are a source of pride to our profession. And one of the greatest of all of these achievements is the discovery of chloroform.

Endometritis.

Winckel (*Wiener med. Woch.*, No. 27, 1895), discussed this disease at the June meeting of the German Gynecological Congress. Simple uterine catarrh usually results from distinct venous congestion. It frequently arises from this cause during infancy from improper clothing, especially tight bandaging of the body. Catarrh may also arise in childhood from want of cleanliness, irritation of the vulva and entrance of worms into the vagina. Anæmia and other diseases of the blood cause catarrh in childhood. In adult life the causes of the same disease are innumerable. After bad burns, hemorrhagic endometritis is frequent. In acute infectious diseases this disease may arise either from entrance of the specific germ into the endometrium or from irritation of that membrane due to chemical products evolved by the germ. Endometritis decidualis polyposa results from retained relics of decidua after abortion and premature labor. In endometritis exfoliativa there is never any infiltration, as has been asserted. Between the shedding of one membrane and the development of the next there may not be the least trace of any discharge. Tuberculous endometritis is rare, the tube being more commonly the seat of tuberculous disease when it attacks the female genitals. Gonorrheal endometritis is very frequent, and Winckel contends that the gonococcus travels not only along the endometrium to the tubes, but also through the uterine wall to the peritoneum. Recent literature records no instance of true diphtheritic endometritis.

THE RADICAL CURE OF HERNIA BY THE INTRA-PELVIC METHOD.*

CHARLES A. L. READ, A.M., M.D., CINCINNATI.

A year ago I presented the various steps of an intra-pelvic method of operating for the cure of, more particularly, inguinal and femoral hernia. In view of the fact that the profession had for a long time practically abandoned all elective operations for hernia, I consider the cordial letters and earnest inquiries which I have received from, practically, every State in the Union and from Europe as an indication that not only surgeons, but general practitioners, are ready to consider an operation the essential features of which embrace the removal of the cause of hernia, and the restoration of the canal, with its contained and neighboring structures, to their normal position and powers of resistance. It is my intention to discuss this procedure in detail, and to depart from the conventional form of an essay and present a series of replies to interrogatories which may, with but little license, be formulated from letters which I have received upon the subject. I also incorporate a paragraph or two relative to the same principle applied to the cure of certain forms of ventral and umbilical hernia.

In what essential particulars does this intra-pelvic method differ from the several methods of radical operation now in vogue?

It differs, in the first instance, in the fact that it is intra-pelvic, while the others—Bassini's, Halstead's McBurney's Macewen's—are extra-pelvic. This becomes apparent when it is remembered that the intra-pelvic method embraces the following essential steps (*e. g.* in inguinal hernia), viz.: An incision through the skin and superficial fascia coincident with the axis of the tumor, from a point an inch below the external ring to a point two inches above the internal ring. The portion of the incision below the external ring is now carried down to the hernial sac. The portion of the incision above the internal ring is now carried through the abdominal wall, peritoneum and all. The sac, if adherent, is now dissected loose, its contents reduced, and the sac itself invaginated upon the finger and returned into the pelvic cavity. It is now drawn out of the abdominal incision and bisected laterally and the flaps separated. The cord, now thoroughly exposed within the pelvis, is placed in the outer angle of the internal ring, the anterior and posterior pillars of which are now stitched together by interrupted sutures of either tendon or chromacised cat-gut. The peritoneal flaps, formed by the bisection of the sac, are rolled together and are stitched by interrupted sutures into a protective pad, the natural position of which is directly over the internal ring. The cord is now placed at the inner angle of the external ring, the anterior and posterior pillars of which are now stitched together by interrupted sutures of tendon or chromacised catgut. This done, the incision is to be closed by a laminated animal suture. This method of closure may be restricted to the peritoneum and to the fasciæ of the transversalis and oblique, but with these structures it is essential. The external incision—*i. e.*, through the skin, fat, and superficial fascia — may be closed in any manner suitable to the operator.

The Bassini operation contemplates the restoration of the posterior wall of the canal. "The spermatic cord is made to traverse the abdominal wall at a higher level than before, so that it no longer emerges at the old hernial aperature, which can be completely closed. To carry out this operation, the aponeurosis of the external oblique over the inguinal canal must be freely divided."

It is obvious that the essential points of difference between my operation and that of Bassini—and there is really no serious occasion for considering any other—consists in (*a*) leaving undisturbed the extremely tense fascia comprising the anterior wall of the ring; (*b*)

* Read before the Mississippi Valley Medical Association, 1895.

† Transactions American Association of Obstetricians and Gynecologists, 1894.

in leaving the cord in the position which nature designed for it, and entirely protected by the normal fascia; (*c*) in closing the internal ring on the inside of the pelvis, and in protecting it by a strong peritoneal pad; (*d*) in avoiding the menace to virility arising from a transplantation of the cord, its possible constriction by an artificial ring of tense fascia, and its necessary investment by an inflammatory exudate; (*e*) in increasing the resistance of the parts by fortifying the fascia comprising the anterior wall of the ring, and by increasing and making permanent the obliquity of the cord within its normal canal.

It is the absence of these features that, to my mind, comprises the characteristics of the Bassini operation, which, in the hands of such skillful operators as Coley, has yielded the best results of any extra-pelvic operation now in vogue.

I concur with Macready when he says, relative to the division of the aponeurosis of the external oblique over the inguinal canal—a destructive point in the Bassini operation—that it may be well to consider whether such a step is advisable: "The majority of operators preserve the tendon intact. The justification for dividing it is that thereby the highest point of the neck of the sac can be reached, and no peritoneal recess is left to form a rupture. On the other hand, the power of the inguinal canal to recover itself, when the viscera are kept for a time reduced, is well recognized, and it is open to question whether the wall of the canal formed of normal tissue is not more resistant than one traversed by a scar. Again, after the operation for strangulation, where it has been necessary to cut up the aponeurosis to the external oblique, I have observed that the abdominal wall at that point is generally weak and disposed to bulge, which is not, as a rule, the case when the aponeurosis has been spared."

What cases are suitable for operation?

For ease of operation, the large herniæ occurring in adults are the more desirable, although permanent cures are realized more uniformly in younger subjects. The element of age, except extremely advanced life, ought not to be taken into account, as it cannot be said to exercise a determining influence upon results. In case of strangulation, other conditions being equal, the radical operation should be done without delay in subjects of any age. There is no humanity involved in permitting any patient, however old, to die of strangulated hernia without the benefit of the possibilities of surgery. Coley has operated with success in infants of eight months, while my friend Dr. Robert O'Callighan, of London, has reported several successes among patients in the eighth decade of life. Cases which have been damaged by the long wearing of a truss—and the truss that does not speedily close a hernial ring always enlarges it—are less desirable for operation than those in which a truss has never been worn. The most difficult cases, however, are those in which adhesions of the omentum or of the intestine have been induced, either within the ring itself or low down in the pelvis, by the always unsurgical and strictly fool-hardy treatment by the injection of irritating fluids for the ostensible purpose of cure.

When ought the operation to be done?

In view of the possibilities of strangulation occurring at any time, the earlier an operation for inguinal or femoral hernia is done the better. A typical instance of the proper course of procedure in these cases came under my observation but recently, while visiting the surgical clinic of Professor Kocher, at Berne. A boy, apparently about seventeen or eighteen, was brought into the clinic crying. He had been at work, when he suddenly felt a severe pain in the right inguinal hernia. The usual symptoms of strangulation, except that there had been no vomiting, were present. Examination revealed a hernial tumor, which was manipulated with extreme care, for fear that it might inadvertently be reduced by the ordinary diagnostic manipulations. As soon as the character of the case had been determined the lad was sent to the ward for preparatory ablutions, and within a half-hour he was upon the operating-table. Somewhat to the chagrin of the distinguished operator, the hernia had become reduced, and he was thus deprived of the conspicuous landmarks of which he had hoped to avail himself.

A dextrous and skillful operation—one with which Kocher's name is identified—was done, the patient being off the table in sixteen minutes after it was begun. Why was this an ideal course of treatment? It relieved the lad's present trouble, it saved him from the possibility of subsequent strangulation, it saved him from a prolonged career of invalidism, and enabled him to speedily resume his avocation, all by means of an operation which, under the circumstances, was free from danger.

Violent taxis and long-continued efforts to reduce hernia have killed more people than almost any other procedure that has been erroneously preached under the respectable mantle of conservatism. In non-strangulated cases, the bowels being normally open and there being no complicating diseased conditions present to prevent, I operate upon my cases whenever they will submit. I feel that in this connection I cannot do better than quote from Bennett* what ought to be accepted as an axiom, viz.: "It may be safely held as a surgical doctrine that every case of hernia in which any change has taken place in the condition of the tumor, such, for example, as increase of size or tension, whilst expansile impulse is absent, should be regarded as strangulated hernia and treated accordingly, without waiting for vomiting or other signs of intestinal obstruction."

What are the dangers of the operation?

I know no better way to answer this question than by quoting M. Lucas-Championniere, who says that "it is not an operation for every one, that it is harmless in the hands of a trained surgeon, but disastrous under opposite conditions." I am also impressed that it is not only important that the operation be done by a skilled surgeon, but that it be done under the most surgical conditions and surroundings. It ought not, if possible, to be done in the patient's own home, where it is extremely difficult to secure aseptic surroundings and proper nursing. Even when a trained nurse is employed it frequently happens that the incidental conditions of domestic life elude her vigilance, and negative her efforts and skill. The operation ought, therefore, in all elective cases, be done under those strictly aseptic conditions which can be secured only in a hospital. If this is not done suppuration is liable to ensue. There are no cases in which suppuration is more completely destructive of satisfactory results than in these. Every precaution ought, therefore, to be taken to avoid it. In my own work I have not failed to have primary union in a single case during the last two years—the period during which I have been doing the intra-pelvic operation.

The mortality ought to be practically the same in all of the operations. I have had no death in my own work. Although I attach but little importance to surgical statistics, it is interesting to note that Macready reports Richelot 140 cases, Bishop 199, Macewen 52, each without a death; Bassini 216 and Erdman 106, each with one death. Coley reports a beautiful series of 200 cases and but one death, which occurred from an intercurrent pneumonia, and ought not, therefore, to be considered. This gives published records of 913 cases with but two deaths. I have not the particulars of these deaths, but they doubtless occurred from accidental causes. It must be remembered that these are all records of able surgeons, who operate under the most favorable of circumstances, and who do strictly aseptic work. Macready states, however, that "at three of the large London hospitals of late years the death-rate has been seven per cent." This must be attributable to the fact that the cases occurred at "large general hospitals," where it would seem to be practically impossible to secure either aseptic surroundings, or, it would seem, an aseptic surgeon. There is certainly nothing in the operation that should account for such results.

What after-treatment is required?

First and foremost, let me urge that no truss be used. The effect of a truss that will exert any pressure will be to reopen the wound, or at least to separate the united subcutaneous structures and further weaken the parts by inducing atrophy from pressure, Of course, a truss that will exert no pressure can only be a nuisance. The patient should remain perfectly quiet for at least three weeks after the operation, the surgical features of which are over in five or six

* "Lectures on Hernia," London, 1893, p. 9.

days. The bowels should be kept open for several weeks, and care should be taken to avoid straining at stool for at least several months. The same precaution should be observed with regard to lifting and walking.

What are the probabilities of the return of the rupture?

With the improved methods of operation now in vogue the results realized promise to be of a more permanent character. Coley has had no returns in seventy-six cases of more than one year's standing. I have had no returns in any case operated upon by the intra-pelvic method since I first adopted it, two years ago. In one case, referred to me by Dr. J. C. Culbertson a year ago, I did a second operation three months after the first for development of a rupture which had developed on the other side, a circumstance which could have no relation to the first operation. It is, perhaps, too soon to speak with positiveness, but I have great confidence in the permanency of results following the intra-pelvic operation.

In what manner can the principles of this operation be applied to the cure of ventral and umbilical hernia.

If we recognize the removal of the underlying or causative condition and the restoration of the normal resistant power of the involved tissues as the fundamental principles of the operation which I have been describing, we can at once apply them to the cure of ventral and umbilical hernia. Take, for instance, an illustrative case in which both conditions existed:

A very stout lady, aged about forty, and the mother of a large family, was referred to me three years ago by my friend Dr. Ashburn, of Batavia, O. She had a very large umbilical hernia, quite as large as a man's two fists, and in addition to that she had a very large ventral hernia in the median abdominal line, extending from the umbilicus to the pubis. I operated upon this case by making two semilunar incisions from a point two inches above the umbilical tumor to within an inch of the pubis. These incisions, the ends of which united at the points indicated, outlined a large ellipse of tissue, in which was imbedded the sac of the umbilical hernia. The incisions were carried down to the superficial fascia and the skin and fat was dissected off up to the hernial sac. This was now opened and the large mass of adherent hypertrophied omentum was removed by ligature and excision. An extruded loop of intestine, which was also adherent, was liberated and returned. The umbilical ring was now split, converting it into two lateral broad-surfaced flaps, which were stitched together. The recti muscles were now observed to be quite six inches apart—the essential underlying pathological condition in all cases of hernia in the median abdominal. The object of an operation is to approximate the median margins of these muscles and anchor them. To do this I ran two lines of in-and-out continous sutures in the superficial fascia. The first line infolded about an inch and half of the attenuated abdominal wall. The second line was now directly above the other, and infolded about as much more. The recti muscles had thus been drawn toward the median line until they were not more than an inch apart, each beneath its aponeurotic investment. The superficial fascia and the aponeurosis of the external oblique were now incised on each side coincidentally with the muscle until the margins of the recti were exposed. Interrupted sutures were now passed through the superficial fascia, the aponeurosis of the external oblique and the inner margin of the muscle on each side. These sutures, when tied, anchhored the recti in the median line, and by bringing the superficial aponeurotic margins together gave the muscles a proper investment. Interrupted sutures of silkworm-gut were now used to approximate the skin and the thick layer of fat.

A number of other illustrative cases could be adduced, in none of which has recurrence taken place.

The advantages in this operation consist in (1) securing by the infolding of the redundant but attenuated median fascia the formation of a column which when consolidated by inflammatory adhesions, has a certain retentive and supportive power, the influence of which is of value in preventing recurrence. (2 the anchorage of the recti in the median line restores the retentive power of the wall.

I feel that a general survey of the question of hernia, and an impartial estimate of the various operations now performed for its radical cure, justify the following conclusions, viz.:

1. Hernia is the cause of invalidism and a constant menace to life, with a tendency to grow worse if left to itself.

2. The truss cures a limited number of cases, and furnishes a useful temporary support to certain others, but is the cause of damaging change in structure in all persons who wear it for a long time. I have never operated for strangulated hernia except in a truss-wearing patient.

3. The so-called treatment by injection is unscientific, unsurgical and dangerous, and its results are permanent only in their disastrous features.

4. The best time for operation is when the patient is in good general health, and at the earliest date consistent with his or her convenience. The element of age ought not, as a rule, to be taken into account.

5. Each of the various modern operations—Bassini's, Marcy's Macewen's and Kocher's—have valuable features, and some of them splendid records, while all are better than procedures which preced them.

6. I am partial to the intra-pelvic method for the following reasons, viz.: (1) It is safe, both to the generative function and to life; (2) it places all possible complications under the control of the operator; (3) the convalescence is short and comparatively painless; (4) the recoveries have been uniform; (5) the results have been, and promise to continue to be, permanent.

CORRESPONDENCE.

COLD TREATMENT FOR HYPERPYREXIA.

Mr. Editor:—In the Medical and Surgical Reporter of September 14, I find an interesting letter from Dr. W. D. Abernethy, of Pulaski, Tenn., on the subject of typhoid fever. He says that he does not think that the cold water (or ice?) treatment for hyperpyrexia can be "carried out in private practice."

I agree with the Doctor that antipyretics should scarcely ever be used, but the ice pack can be used very conveniently in practice.

This is my plan, which I used with great success a month or six weeks ago. I spread a rubber cloth over the entire bed: if you can not get rubber cloth, use oil cloth table cover, anything to keep the mattress from being wet. The patient is then rolled over to one side of the bed, and a sheet or blanket, according to circumstances, is folded once the long way, wrung out of a tub of cold, hot or ice water, and laid along side of the patient, who is then gently rolled over upon the wet sheet. The sheet is then tucked around from chin to knees, arms too if necessary, and with a sprinkler or pitcher, the sheet or blanket is kept cold with ice water, or as I did recently, small blocks of ice were rubbed on the outside of the sheet until they melted away. In the case I refer to, the temperature evinced a desire to stay above 105° F. and sponging did no good at all. The ice packs were used every two, three or four hours, as was necessary, and no quinine or other medicine was used to reduce the temperature. If the patient objects to the cold sheet touching them, which they may do, have the sheet wrung out of hot or warm water, and then apply the ice water or lumps gradually, until the necessary amount of cold is produced. The patient referred to above was a boy, athletic, of about 18 years, and he liked to feel the cold. The only other treatment was support of heart with strychnia and morphia, and some mineral acid and two or three doses of turpentine, as indicated. The greatest attention was paid to the reduction of temperature and nourishment. Very little alcohol was used. Six weeks illness, two hemorrhages, and good and rapid recovery.

Jno. W. Corbett, M.D.
Camden, S. C.

THE MEDICAL AND SURGICAL REPORTER

ISSUED EVERY SATURDAY

THE BUTLER PUBLISHING COMPANY, Publishers **P. O. Box 843**

104 Girard Building, Philadelphia, Pa.

HAROLD H. KYNETT, A.M., M.D., . . . Editor

Entered at the Philadelphia Post-Office as second-class matter.

TERMS:—Three Dollars a year in advance. Sent four months on trial for $1.00.
REMITTANCES should be made payable to the Publisher only, and should be made by Money Order or Registered Letter.
NOTICE TO CONTRIBUTORS:—We invite contributors of value to the profession, and if published originally in THE REPORTER such will be paid for at liberal rates, or a limited number of copies of THE REPORTER will be supplied, as the author may elect. Hereafter where reprints are desired writers are requested to make a note of that fact on the first page of the MS., but must order reprints directly from the publisher, who will supply the same at cost rates. Contributors should inclose stamps for postage, that the articles may be returned if not found available.

PHILADELPHIA, SATURDAY, OCTOBER 12, 1895.

EDITORIAL.

FOR HIGHER MEDICAL EDUCATION.

The past week witnessed the reopening of the three great medical schools of Philadelphia, the Medical Department, University of Pennsylvania, Jefferson, and the Medico-Chirurgical. In all three institutions the entering classes are the largest in their respective histories. While the increased number of students indicates prosperity, more auspicious is the fact that the increase occurs in colleges which are notably leaders in the movement toward higher medical education, and the elevation of the standard of requirements for admission to the profession.

In this connection there is much significance in some of the introductory remarks of Provost Harrison, of the University of Pennsylvania. Among other things he said:—

"In my position as a servant, not only of the University as a whole, but of each department and school in the University, there are, I confess, two or three matters at the opening of this new year to which I feel it my duty to call your attention. The first of these is the great importance, as it seems to me, that every one who choses for himself a professional career, should be a well-educated man. The signs of the times all point to very rigid admission requirements in the early future to all those who mark out for themselves such responsible positions. It is well that it is so. The simple question is, Is it right that a man should be allowed to go into medicine, or law, or dentistry, or any other profession, without having enjoyed a good preliminary education—without being in the first instance a well educated man, with a capacity to think for himself—as well as special technical training? Surely the professions demand a broader and deeper preparation than is now commonly accorded them.

"I believe that within a very few years the men who go out from the professional schools of our great universities—the men with whom you will have to compete in life and in your profession—are going to be well-educated men; that both entrance and exit of the professional school will be much more care-

fully guarded in the future than they have been in the past at this and at other universities.

"I do not say these things by way of discouragement; I say them by way of exhortation and warning. To any of you who are lacking in the preparation of which I have spoken, there is a chance to make up, partially at least, what is wanting by time properly spent.

"What is the historic reason why medical and other kindred schools are now so thronged? Is it not that the 'Cura et regimen animarum' has ceased to be the sole subject of solicitude on the part of mankind? The body, the vehicle of the soul—life here fuller and in greater measure—this men have come to place side by side with the great subject which years ago formed almost the sole object of earnest study."

In the course of the opening address at Jefferson, Dr. John H. Brinton introduced the latest advances at that institution in a very happy manner. He said:—

"Phases of newness are but kaleidoscopic changes marking a mental activity shared now by the many, formerly possessed by the few. Dissatisfaction with what we have, the old, and a craving for what we have not, the new, is a feeling coeval with man. We all feel that of late the comforts and capabilities of life have been wonderfully bettered by the discoveries and inventions which have followed each other in increasing rapidity. The life of two decades since would simply be unlivable to-day. The arts and sciences have gone forward with measured tread, and in the general advance medicine has more than kept even pace. She is in the front. In every direction her boundaries have been widened by new discoveries and fresh developments in her component and subordinate branches. Especially has renewed activity marked investigations in pathology, and recent results have rewarded such research, results not vague or theoretical, but practical in their bearing and of direct application.

"The domain of medicine has thus been greatly enlarged and the consequent wants of the student and responsibilities of his teachers have been proportionately augmented. An increase in the number and especially in the scope of his studies has made necessary a lengthened course. In our college this was at first advanced from two to three years, but experience has shown that even this period is too short. An intellectual digestion rather than an intellectual cram must be obtained. Therefore it has been decided to add a fourth year to the college curriculum. To carry this change into effect we are now met and it becomes my pleasing duty in the name of the trustees and faculty to welcome you all on this opening night of another era, the inauguration of a 'New Jefferson College.'"

Dr. William E. Hughes, in inaugurating the new year at the Medico-Chirurgical College, remarked:—

"The multiplication of educational institutions in this country often inures to their disadvantage as actual disseminators of knowledge. By dividing their forces they are crippled, and as a result no one does perfect work. In medicine it is in a sense different. The theory must ever go hand in hand with its practical application; so that the value of a teaching institution to the students depends largely upon the opportunity which these students enjoy of seeing applied the principles which have been expounded to them, and learning in the seeing that these principles are not mere idle theories, but facts which when practically employed lead to practical results. Herein lies the true essence of successful medical teaching, and in this is bound up our excuse for being and the reason for our success."

ococci be found, the patient must be cured before he may marry.

To detail the treatment of gonorrhea, acute or chronic, would be out of place here. A discussion of the modern methods, by which many of the most severe cases can be cut short effectively and harmlessly, belongs to bodies of exclusively medical men. The significance of threads, flakes, granules, etc., in otherwise healthy, clear urine, equally must be judged by those who examine it. Nor are we concerned just now with the possible and probable effects directly upon the male patient. We may, however, briefly sum up in the following propositions, as regards gonorrhea and marriage:

1. Gonorrhea, per se, is a dangerous disease, but curable at any stage;
2. Even when all external evidences of its existence have disappeared, the patient may still be able to infect;
3. A woman infected with gonorrhea is in danger of her life;
4. No man should marry who can infect his wife;
5. In a week or ten days' time it can be determined whether a man can infect or not.

In view of the above it is manifestly the duty of every layman and physician to disseminate, as far as lies in his power, the knowledge that will save many a life. Physicians, in the exercise of their priesthood, are continually working against their own interests, by teaching the prevention of disease. Thus they fulfill their highest mission. The educated laity, many of whom are attending this Congress for the benefit of humanity, should aid our profession in this work.

It certainly is meet and proper to devise means for the protection of innocent babes. Is it not equally proper that innocent girls who marry to bear children to the man they love, be protected? Their protection lies in educating men to abstain from marriage while they can infect. Every such marriage prevented, will protect a woman from death, or, what is far worse, a life of mental and physical torture.

ŒDEMA AND PROLAPSE OF CERVIX IN PREGNANCY AND LABOR.

Geyl (*Volkmann's kln. Vorträge*, No. 128, May, 1895) describes a second case of this rare condition seen in his own practice. Five have already been collected by Guéniot, the discoverer of the disorder in question, and one by Misrachi, and thus eight cases complete thd series. Geyl makes use of the formidable name "œdema acutum cervicis uteri gravidi parturientis seu puerperalis intermittens," which also forms the title of this monograph. In Geyl's last case he first saw the patient in February 19th, 1894. She was in the seventh month of pregnancy, and complained that a body frequently protruded from the vulva and went up again. A sanious mucus discharge ran from it as long as it was down. A year previously Geyl had used the curette for endometritis. He had opportunities of examining the prolapsed body. It was a cylindrical structure, 2½ inches long outside the vulva cleft, ending in a blunt extremity nearly 2 inches wide. It pitted on pressure of the finger, the depression disappearing directly the finger was removed. On careful exploration it was found to be the anterior lip of the cervix. The chief examination was made on March 24th, when labor pains were suspected. After rest, with elevation of the pelvis, the swelling disappeared. It came down again daily before labor. On the night of April 7th precipitate labor occurred, the child being delivered after four pains only, when the patient had been one hour in bed; the placenta soon followed. Geyl arrived when all was over; the uterus was perfectly normal. Ten days later the anterior lip of the cervix felt simply a little larger than the posterior. As reduction is usually spontaneous, and as this case shows that labor is but little affected, œdema of the anterior lip is hardly a dangerous complication of pregnancy.

COMMUNICATION.

THE PRESENT STATUS OF LINEAR CRANIECTOMY*

JOHN FORD BARBOUR, M.D.,† LOUISVILLE, KY.

Craniectomy was first performed in 1878 by Dr. Fuller, of Montreal, upon a child for the relief of idiocy, with the object in view of allowing the expansion of the brain.

There is no record of the operation being performed again until 1890, when Prof. Lannelongue, of Paris, undertook it with the same object in view. He afterward operated upon twenty-four other cases. The following is an abstract of his report made before the French Surgical Congress, March 31, 1893:

"The operative results," he says, "have been as follows: twenty-five operations, twenty-four recoveries; the average duration has been ten days. One death eight hours after the operation. My youngest patient was eight months of age; my oldest twelve years and a half. I have operated upon thirteen boys and twelve girls.

"What shall I say as to the final results? For while it is encouraging to have nothing but recoveries to report, we should not forget the real object of the operation.

"My cases have been watched over with all the solicitude possible, and I am now in possession of documents which permit me to say that the large majority of them have been manifestly benefited. But as most of these operations are comparatively recent, I shall content myself at present with informing my confreres that I shall publish the results obtained in detail."

This report was made four years ago, and since then Prof. Lannelongue has maintained a significant silence.

This operation was speedily taken up by other surgeons, especially in England and America. In June, 1893, Dr. Bourneville, of Paris, wrote a very able paper upon this subject for "*Le Progres Medical*," based upon the reports of eighty-three cases. To this paper I am largely indebted for the facts brought out in this article. With few exceptions, these reports are lacking in exact information as to the moral, intellectual, and physical condition of the patients before the operation. Very often an improvement is claimed, but nothing is said as to the nature of this improvement.

Lannelongue proposed by craniectomy to give full scope to the brain, by weakening the resistance of the skull. This resistance, according to the surgeons who practice this operation, is caused by premature ossification of the sutures in microcephalus. Under the latter term they seek to unite the different forms of idiocy. The lesions described, such as hydrocephalus, sclerosis, etc., says Lannelongue, "are coincident with premature synostosis." Is this opinion supported by pathological anatomy? Even if it be admitted that premature synostosis occurs in idiots, this by no means demonstrates the necessity for craniectomy.

It is necessary to discover what are the lesions causing idiocy before we can estimate the probable effect of craniectomy. The following is Bourneville's classification of idiocy:

1. Idiocy symptomatic of hydrocephalus, or hydrocephalic idiocy.
2. Idiocy symptomatic of microcephalus, or microcephalic idiocy.
3. Idiocy due to arrested development of the convolutions.
4. Idiocy due to a congenital malformation of the brain, as in true porencephaly and absence of the corpus callosum, or to a pathological malformation, such as pseudo-cysts, pseudo-porencephaly, etc.
5. Idiocy due to hypertrophic sclerosis.
6. Idiocy due to atrophic sclerosis.

* Read before the Louisville Academy of Medicine.

† Neurologist to the Louisville City Hospital, etc., etc.

ABSTRACTS.

WHEN MAY GONORRHEAL PATIENTS BE ALLOWED TO MARRY?

Valentine, in a paper read at the Medico-Legal Congress, September 6, 1895, (*Amer. Med. Surg. Bul.*):—As this learned body does not consist exclusively of physicians, a few remarks on gonorrhea may appropriately preface this paper. Gonorrhea being among the most frequent of diseases, its disagreeable, painful characteristics need no description. Yet, despite that frequency, its possible consequences to the patients and to others are underrated. This is due to that familiarity with its manifestations which seems to have bred contempt for the results. All have heard of the man who was as little troubled by a clap as he would be by a common cold. None have ever seen him, save in those rare instances in which, at the time of making the assertion, he was not suffering from the disease. The very frequency of clap has caused it to be considered a proper, or, rather, improper, and therefore more delectable, subject of humor. The same sentiment prompted the French to masquerade and dance when cholera raged. Who does not remember the little couplet, born of that Galgenhumor:

> Il existent des familles entières,
> Qui sont mortes du cholera.

So clap is laughed at; but there is bitter wit in the hyperbole that offers a keg of nails to chew as a palliative for the pain produced on urinating.

The "issue from the flesh," as it is spoken of in church literature, is as old as the history of man. It results from impure relations between the sexes. Neisser, in 1872, discovered that it depends upon a characteristic microbe which he named, most unhappily, the gonococcus. In fresh attacks it produces the well-known discharge, whose normal term of duration, if fortunately treated, was, until recently, six weeks. Under the present form of treatment, originated by Prof. Jules Janet, of Paris, its average duration is now below ten days. The possible complications of the disease, under the older treatments, need not now be discussed, for they affect only the patient himself. But what if he communicate the disease to others?

Noeggerath, of New York, fully thirty years ago sounded the first note of alarm in this connection. On purely clinical grounds he attributed a vast proportion of death-dealing diseases in women to gonorrhea, which the husbands had had years before. Noeggerath's assumption has been more than borne out by recent science. A suppositious case may be recited here, covering a multitude of actual ones, seen daily.

A man contracts gonorrhea. After a time all discharge and other evidences of the disease disappear. His physician dismisses him as completely cured. Five, ten, or more years later he has almost, if not entirely, dropped from his mind this, with other disagreeable, recollections. He marries a healthy, strong girl. The young wife soon begins to fade. Vague pains set in. If her friends love her, she will be twitted with congratulations and advice regarding the presumed coming maternity. Her form, too, suggests such possibility. But by the time when, or before, the child that is to make her still more loved by her husband is expected, it is found necessary to seek professional advice.

A cyst of the ovary, a fallopian tube filled with pus or some other dangerous disease, is discovered. An operation, perilous to life, must be performed to save her. If she survive, she will no longer be a woman, for she cannot become a mother. The light of modern microscopy, brought to bear upon the tumor, cyst, tube, or other substance removed, shows gonococci. Remember that this wreck, which, but a few short months ago was a vigorous, healthy woman, was "as chaste as ice, as pure as snow." Remember, too, that her husband presented no sensory evidence of the disease that killed his cherished wife. Killed—the word is advisedly

employed—for, though she live, she is worse than dead; she is not only unsexed, but also physically destroyed.

There are many other consequences of gonorrhea which cannot be cited now, lest they swell this paper beyond its proper dimensions. It will suffice, as a mere example, to recall German statistics, which show that, of the children who become hopelessly blind shortly after birth, over eighty per cent. have sightless globes owing to gonorrheal ophthalmia.

Should, therefore, all men who have had gonorrhea be condemned to celibacy? How many, then, could marry? It would not be overhazardous to say that not one man in a thousand who swears to cherish and guard the woman of his choice, can do so without imperiling her life.

It might strike many at once that something forcible should be done to protect innocent women. The suggestion of legislative enactments looms up as a remedy. A moment's thought will make clear how any legislation in this direction must prove futile.

The remedy lies in education. The most ignorant can be taught that clap is a dangerous disease. It is perfectly true that, under the influence of ordinary injections, secret medicines, much advertised preparations, cases of apparent clap have recovered in as short a time as three days. The microscope would have revealed that these discharges were not clap at all. If left utterly without treatment, they would have stopped in half the time or less. But it cannot be repeated too often: Clap is a dangerous disease! Aside from the many complications and consequences which it may bring to the persons affected, it can make the patient hopelessly blind in twenty-four hours. These facts alone, of a multitude of others equally alarming, which affect the patient's self-love, being duly impressed upon his mind, we may go a step further.

A disappearance of all external evidence of the disease by no means makes the ex-patient unable to cause his wife's death. Lurking in the crypts, follicles, and glands of his urethra may be gonococci. In the sexual relation these murderous bacteria are wholly or partially emptied out. Enough of them may be projected to pass with the semen to the regions where a future human being should be given life, and the prospective mother then has within her the fungus of destruction. Is there no way, then, by which it can be determined whether a man is free from infective possibility? Indeed, this paper would fail of its purpose if there were none.

Modern means of exploration come to our aid. The urethroscope, by means of which every part of the urethra can be distinctly seen, will oftentimes show glands, crypts, or follicles in an unhealthy state. This frequently occurs in cases which presented no external evidence of disease for years. The contents of these glands, crypts, or follicles, being expressed and examined microscopically, will reveal the presence or absence of gonococci. If gonococci be present, the patient must not marry until they are made to disappear absolutely and entirely. It is proper to say here that the above described exploration and examination are entirely painless.

Cases will present in which the foci of infection are either so minute or so nearly covered by mucous membrane that they are not at all visible. In such cases the urethra may appear almost healthy, and yet contain perhaps even infinitesimally small glands filled with gonococci.

An irritant injection will produce a flow lasting from twelve to forty-eight hours. This flow, examined, will or will not be found to contain gonococci. If it contains gonococci, it will have so irritated their source, or sources, as to bring them to sight by means of the urethroscope. Through the same instrument they can be destroyed and the patient rendered innocuous. If, however, the discharge produced by the irritant injection contains no gonococci, a second such injection should be made a week later. This will certainly reveal gonococci, if they be present anywhere in that urethra. If none is found, the physician may safely advise marriage, as far as possibility of infecting the wife is concerned. This whole procedure is practically painless, and does not disable the applicant from his occupation. But, even were it associated with frightful agony, and did it work great business disturbance, it would be better that the man suffer a while than that he cause his wife's death, or worse than death. Of course, if gon-

ococci be found, the patient must be cured before he may marry.

To detail the treatment of gonorrhea, acute or chronic, would be out of place here. A discussion of the modern methods, by which many of the most severe cases can be cut short effectively and harmlessly, belongs to bodies of exclusively medical men. The significance of threads, flakes, granules, etc., in otherwise healthy, clear urine, equally must be judged by those who examine it. Nor are we concerned just now with the possible and probable effects directly upon the male patient. We may, however, briefly sum up in the following propositions, as regards gonorrhea and marriage:

1. Gonorrhea, per se, is a dangerous disease, but curable at any stage;
2. Even when all external evidences of its existence have disappeared, the patient may still be able to infect;
3. A woman infected with gonorrhea is in danger of her life;
4. No man should marry who can infect his wife;
5. In a week or ten days' time it can be determined whether a man can infect or not.

In view of the above it is manifestly the duty of every layman and physician to disseminate, as far as lies in his power, the knowledge that will save many a life. Physicians, in the exercise of their priesthood, are continually working against their own interests, by teaching the prevention of disease. Thus they fulfill their highest mission. The educated laity, many of whom are attending this Congress for the benefit of humanity, should aid our profession in this work.

It certainly is meet and proper to devise means for the protection of innocent babes. Is it not equally proper that innocent girls who marry to bear children to the man they love, be protected? Their protection lies in educating men to abstain from marriage while they can infect. Every such marriage prevented, will protect a woman from death, or, what is far worse, a life of mental and physical torture.

ŒDEMA AND PROLAPSE OF CERVIX IN PREGNANCY AND LABOR.

Geyl (*Volkmann's kln. Vorträge*, No. 128, May, 1895) describes a second case of this rare condition seen in his own practice. Five have already been collected by Guéniot, the discoverer of the disorder in question, and one by Misrachi, and thus eight cases complete thd series. Geyl makes use of the formidable name "œdema acutum cervicis uteri gravidi parturientis seu puerperalis intermittens," which also forms the title of this monograph. In Geyl's last case he first saw the patient in February 19th, 1894. She was in the seventh month of pregnancy, and complained that a body frequently protruded from the vulva and went up again. A sanious mucus discharge ran from it as long as it was down. A year previously Geyl had used the curette for endometritis. He had opportunities of examining the prolapsed body. It was a cylindrical structure, 2½ inches long outside the vulva cleft, ending in a blunt extremity nearly 2 inches wide. It pitted on pressure of the finger, the depression disappearing directly the finger was removed. On careful exploration it was found to be the anterior lip of the cervix. The chief examination was made on March 24th, when labor pains were suspected. After rest, with elevation of the pelvis, the swelling disappeared. It came down again daily before labor. On the night of April 7th precipitate labor occurred, the child being delivered after four pains only, when the patient had been one hour in bed; the placenta soon followed. Geyl arrived when all was over; the uterus was perfectly normal. Ten days later the anterior lip of the cervix felt simply a little larger than the posterior. As reduction is usually spontaneous, and as this case shows that labor is but little affected, œdema of the anterior lip is hardly a dangerous complication of pregnancy.

COMMUNICATION.

THE PRESENT STATUS OF LINEAR CRANIECTOMY*

JOHN FORD BARBOUR, M.D.,† Louisville, Ky.

Craniectomy was first performed in 1878 by Dr. Fuller, of Montreal, upon a child for the relief of idiocy, with the object in view of allowing the expansion of the brain.

There is no record of the operation being performed again until 1890, when Prof. Lannelongue, of Paris, undertook it with the same object in view. He afterward operated upon twenty-four other cases. The following is an abstract of his report made before the French Surgical Congress, March 31, 1893:

"The operative results," he says, "have been as follows: twenty-five operations, twenty-four recoveries; the average duration has been ten days. One death eight hours after the operation. My youngest patient was eight months of age; my oldest twelve years and a half. I have operated upon thirteen boys and twelve girls.

"What shall I say as to the final results? For while it is encouraging to have nothing but recoveries to report, we should not forget the real object of the operation.

"My cases have been watched over with all the solicitude possible, and I am now in possession of documents which permit me to say that the large majority of them have been manifestly benefited. But as most of these operatious are comparatively recent, I shall content myself at present with informing my confreres that I shall publish the results obtained in detail."

This report was made four years ago, and since then Prof. Lannelongue has maintained a significant silence.

This operation was speedily taken up by other surgeons, especially in England and America. In June, 1893, Dr. Bourneville, of Paris, wrote a very able paper upon this subject for "*Le Progres Medical*," based upon the reports of eighty-three cases. To this paper I am largely indebted for the facts brought out in this article. With few exceptions, these reports are lacking in exact information as to the moral, intellectual, and physical condition of the patients before the operation. Very often an improvement is claimed, but nothing is said as to the nature of this improvement.

Lannelongue proposed by craniectomy to give full scope to the brain, by weakening the resistance of the skull. This resistance, according to the surgeons who practice this operation, is caused by premature ossification of the sutures in microcephalus. Under the latter term they seek to unite the different forms of idiocy. The lesions described, such as hydrocephalus, sclerosis, etc., says Lannelongue, "are coincident with premature synostosis." Is this opinion supported by pathological anatomy? Even if it be admitted that premature synostosis occurs in idiots, this by no means demonstrates the necessity for craniectomy.

It is necessary to discover what are the lesions causing idiocy before we can estimate the probable effect of craniectomy. The following is Bourneville's classification of idiocy:

1. Idiocy symptomatic of hydrocephalus, or hydrocephalic idiocy.
2. Idiocy symptomatic of microcephalus, or microcephalic idiocy.
3. Idiocy due to arrested development of the convolutions.
4. Idiocy due to a congenital malformation of the brain, as in true porencephaly and absence of the corpus callosum, or to a pathological malformation, such as pseudo-cysts, pseudo-porencephaly, etc.
5. Idiocy due to hypertrophic sclerosis.
6. Idiocy due to atrophic sclerosis.

* Read before the Louisville Academy of Medicine.

† Neurologist to the Louisville City Hospital, etc., etc.

7. Idiocy due to meningitis or chronic meningo-encephalitis.

8. Idiocy associated with the pachydermatous or myxedematous cachexia, due to absence of the thyroid gland.

9. Idiocy due to tumors of the brain.

With a view to determining the role played by premature synostosis in the production of idiocy, Bourneville held post mortems upon twenty-one idiots. (I have some of the cuts made from photographs of the skulls and brains in these cases. These furnish the most convincing proof that could possibly be given of the absurdity of Lannelongue's claim, that idiocy is always coincident with premature synostosis of the skull.) In only two or three of these cases was there a partial synostosis.

There is very little reason then, a priori, to expect any good results from craniectomy. The causes of idiocy, as laid down by Bourneville, and the pathological findings are all against the operation.

Let us next examine the clinical results obtained. I have tabulated eighty-nine operations. I shall simply give you here the net results.

In these eighty-nine cases, there were sixteen deaths as the result of the operation. In the remaining seventy-three cases the result was practically nil in twenty cases. This leaves fifty-three cases. In four it is simply stated that the patient recovered from the operation. This cuts the number down to forty-nine. In one, the epileptiform, attacks were less frequent. In the remaining forty-eight, a greater or less improvement is claimed, but the degree and character of this improvement are not stated and the details are usually very meagre; so that we must accept these claims cum grano. In most of these cases, moreover, a sufficient length of time had not elapsed since the operation to render it possible to determine the final outcome. It is certainly a very significant fact that hardly any one of these operators has submitted a second report as to the permanent results obtained.

One of the most favorable of these cases is that reported by Dr. B. Joos in the "*Korrespondenzblatt fuer Schweizer Aerzte*" for June, 1893. Dr. Walder, of Winterthuer, operated upon a child of three years and nine months. The parents of the child made the following report: The birth of the child was normal; no insanity or idiocy in the family. The child behaved like a wild animal. Day and night it was extremely restless and kept up a loud noise; it was vicious also, and tried to bite its relatives; it was very uncleanly, and passed its urine and feces in bed and besmeared itself with them.

Present condition: The patient is an idiot. He lies mostly upon his belly, and when put upon his back raises a loud, brutish cry. In spite of his age, he can make no intelligible sound—nothing but inarticulate noises. By the continual raging and screaming, he has brought on a prolapse of the rectum and a rupture. The skull is microcephalic. All the sutures are firmly united.

On Nov. 27, 1891, a linear craniectomy was performed upon the left side, a canal as wide as the index finger being cut out. The afternoon after the operation and the next day the child was strikingly quieter and lay upon its back, which had never been the case before. The improvement continued during the next few months. The patient remained quiet and made signs for the bed-pan. As his power of speech did not improve, Dr. Walder removed a portion of the skull over the speech center. A year and three months after the first operation the improvement was very pronounced. The child learned to speak words, among the first being the name of his nurse. By methodical exercise the patient had been brought to the point of repeating about twenty words of one or more letters and the alphabet. He spoke a few broken sentences.

Even though the idiocy may not have been relieved by the operations, the author concludes, still a great service has been done the boy and his environment. From a being whose whole conduct reminded one of a wild beast, he has been changed into a quiet, docile boy, who can at least be endured in human society. The skull has increased several centimeters in size. It is reasonable to question whether, in this case, the improvement was not due more to the systematic exercises carried out for a year and three months than to the operations.

On April 6, 1893, Dr. Ap. Morgan

Vance operated upon a patient of mine with the following history: No history of syphilis, idiocy, or insanity in either branch of the family. The birth of the child had been normal in every particular. It had progressed in every way until the fourth month, when the anterior fontanelle closed. From that time there had been absolute cessation of mental development. When I saw it, it was two years old. There was inability to maintain the upright posture. No control over the sphincters. It was impossible to attract the child's attention. Its face wore a constant dxpression of pain, due to the combined action of the occipito-frontalis and the orbicularis palpebrarum muscles. It kept up a constant, low whimpering. There were epileptiform attacks, consisting of a severe, general tonic spasm of the muscles, followed by a loud, frightened cry. These attacks sometimes occurred as often as 24 times in a day. The child was extremely restless. The only object which it seemed to recognize was its milk-bottle. Here, then, was a typical case for testing Lannelongue's claims.

On April 6, 1893, Dr. Vance performed linear craniectomy on one side of the head, and June 16 on the other. The immediate effect of the operation was certainly very remarkable and impossible to account for. I saw the child about three hours after the first operation. It was lying upon its back quietly, and when I spoke to it, it looked straight at me for the first time in its life. The child's brother waved a bright-colored toy in front of it, and it followed it with its eyes. The pained expression had disappeared from its face, and there was a much more intelligent look in its eyes. I was not especially optimistic about the operation at the time it was undertaken, so that I am certain that I was not deceived in this. This improvement lasted about a week, and recurred after the second operation. The only permanent effect was a lessening in the number of epileptiform attacks. When we come to boil the whole matter down, we arrive at the following conclusions:

1. Premature synostosis of the cranium does not occur in idiocy.

2. The arrested growth of the skull is due to the arrested development of the brain, and not vice versa.

3. The lesions to which idiocy are due are profound, varied, extensive, and by no means susceptible of relief by craniectomy.

4. The results obtained by operation are slight, doubtful, or nil.

So that over against this operation we must write in letters of fire—*Mene, mene, tekel upharsin.*

Leguminous Alimentation in Disease of Digestion and Nutrition.

Bovet (*Presse Med.*) refers to the apparent connection between richness in albumen, or the nitrogenous elements of plants, and organic phosphorous, these two seeming to run parallel. In the leguminosa they are found in greatest proportion. One consequence of the association of phosphates with albumen (vegetable), and the "diffusibility" of phosphoric acid, is that food of this character (leguminous) is very readily dissolved and digested in the alimentary canal, even in the absence of the usual ferments. The presence of a relatively large amount of potash salts in this food is also noted. In the laboratory of Professor Hayem a dog was fed for thirteen days on an exclusive diet of "legumine," a soup free from salt. The result was first a marked decrease in its weight, amounting to one-tenth. An analysis of the gastric juice, at the beginning and end of the experiment showed a marked increase in two most important values, namely, hydrochloric acid and chlorine. This may be interpreted as increased digestive power. A similar experiment on a patient, aged 42, suffering from chronic gastritis, slight dilatation, and loss of motor power of the stomach, weakness and emaciation, showed results altogether comparable to the above. At the beginning the gastric juice, although highly acid, was free from hydrochloric acid. At the end of two months the total acidity was not increased, while hydrochloric acid was present in almost normal amount. Digestion (previously slow and painful) no longer inconvenienced the patient. Neurasthenia was lessened, and she slept eight hours daily without awaking, something she had not done for a long time previously.

PERISCOPE.

IN CHARGE OF WM. E. PARKE, A.M., M.D.

MEDICINE.

A Pessimistic View of Electrotherapy

is given by Prof. F. Shultze, director of the Polyclinik, at Bonn University, who for many years was acting electrotherapist for Prof. Erb. He says in a monograph upon the curative action of electricity in affections of the nerves and muscles published by Beymann, of Weisbaden, that the action of electricity has proved itself very limited in these affections, so far as the usually adopted methods are concerned. Especially is this the case in organic destructive condition of the central nervous system. Although these cannot be cured, some of their sequelæ may be more rapidly improved and partly removed.

In the similar affections of the peripheral nerves, a more rapid curative result by means of electricity seems to be not improbable, although not yet proven.

Among the so-called functional diseases of the nervous system certain hysterical symptoms are most favorably influenced, the psychical influence being a prominent factor. Neuralgias and myalgias, and feebleness of organs with smooth muscular fiber may be curable by electricity and in severe neuralgias only exceptionally, and frequently not so readily as by other remedies.

It behooves us, therefore, to draw the line of indications more closely for the application of electricity, than was expected at the time of the rise of electrotherapy. But it cannot be detrimental to speak freely and without prejudice upon the capacity of any remedy. By this means we may be directed to new remedial methods and especially to the investigation of causes of serious diseases instead of at once trusting to a single remedy, which only too often leaves us disappointed.

Treatment of Pneumonia.

G. Ivanoff (Bulgarian *Meditzina*), senior physician to the Lom Hospital. says that he most successfully treats croupous pneumonia by the internal use of camphor with antipyrin (R Camph. pulver. 0.5 gramme; antipyrin, 2.0; morph. hydrochlor. 0.02; sacch. q.s. M. f. pulv. One-fourth to be given every one or two hours). In adynamic cases he simultaneously resorts to hypodermic injections of camphor in the dose of from 0.05 to 0.1 g., three or four times a day, for which purpose he employs a fatty solution (0.5 camphor to 0.1 g. olive oil). The writer reports a series of twenty-two cases treated consecutively by this method at the hospital during the period December 10, 1893, to March 25, 1894. All of them were rather severe, but nevertheless every one ended in recovery. The hospital registers for 1889 to December. 1893, show that, previously to the introduction of the treatment, from three to seven patients succumbed to the disease every year, the yearly number of pneumonia cases admitted oscillating between twenty and thirty.

Recovery from Tubercular Meningitis.

The question of recovery in tuberculous meningitis has hitherto been obscured by doubt as to the diagnosis. This was not so in a case reported by Freyhan, who made an exploratory puncture of the spinal canal in the lumbar region. About 60 cubic centimeters of slightly turbid, pale, serous fluid spurted out. In the sediment, pus corpuscles and tubercle bacilli were found. The patient improved rapidly, and, in three weeks after the puncture, was able to rise from bed. Recovery can therefore not be looked on as a reliable sign in distinguishing between various forms of meningitis. Incidentally the case raises the question of the therapeutic value of puncture in meningitis.—*Amer. Jour. Med. Sciences.*

Rupture of the Heart.

A specimen of ruptured heart was presented at the meeting of *Societe Anatomique* by Greffo. It was observed in the service of Chautemesse, by Menetrier. The patient, a woman of 71 years, was in apparent good health, but had a certain excess of adipose. It was suddenly announced to her that her son was very ill. She was immediately taken with choking, with syncope and died. At the autopsy a certain quantity of blood was found effused into the pericardium, and a very neat rupture of the posterior wall of the left ventricle. The valves are healthy. The myocardium does not appear to be altered exteriorly.—*Le Bulletin Medical.*

Neuroses of Childhood.

Dr. B. K. Rachford (*Archives of Pediatrics*), after a careful and prolonged study of the effect of a venous condition of the blood in producing neurotic diseases in children draws the following conclusions:

1. Both arterial anæmia and venous congestion can produce an excitable condition of the nerve centers and may therefore be factors in the production of nervous symptoms.

2. The nervous symptoms resulting from arterial anæmia are very similar to those resulting from venous congestion, and this is because in both conditions there is a venous condition of the blood supplying the nerve centers.

3. Arterial anæmia and venous congestion produce nervous symptoms by producing a malnutrition rather than a simple innutrition of the nerve centers.

4. Arterial anæmia and venous congestion weaken the inhibitory centers, and this results in the discharge of force from reflex centers on comparatively slight excitation.

5. Arterial anæmia and venous congestion make more excitable both the reflex centers in the cord, and the more important reflex centers in the medulla oblongata.

The above outline will be of assistance in explaining many obscure nervous symptoms, and

the following examples may be cited to indicate the important relationship existing between a venous condition of the blood and the neuroses of childhood.

1. The venous condition of the blood resulting from a weak or crippled heart, is at least a partial explanation of the relationship which exists between this condition of the heart and certain neuroses such as chorea, hysteria and general nervous irritability.

2. Rheumatism, scarlet fever, diphtheria and other acute diseases which ofttimes produce a weakened condition of the heart, may in this way be indirect factors of neurotic disease (from what has been said in the previous chapter, it is scarcely necessary here to note that these diseases may also act in another way in producing nervous symptoms).

3. Tuberculosis, chronic intestinal catarrh and other diseases that produce a profound chronic anæmia and resulting malnutrition of the nervous centers may be powerful factors in producing many of the neuroses, such for example as hysteria, incontinence of urine, chorea and spasm.

The Treatment of Vomiting.

The *Province Medicale* publishes an article in which the writer considers the question of the difficulty of controlling various kinds of vomiting.

He recommends the following formulas, the first of which, according to Steffen, is useful in the vomiting of pregnancy: Distilled water, five ounces; tincture of iodine, twelve drops. A tablespoonful of this in half a glass of sweet water is to be taken every two hours. The same author recommends the addition of a few milligrammes of morphine hydrochloride to each spoonful, or an ounce of the distilled water may be replaced by an ounce of cherry-laurel water. The *Centralblatt f. de Gesammte Therapie*, in one of its last numbers, recommends the two following formulas:

1. Chloroform, nine hundred grains; tincture of iodine, a hundred and twelve grains. Five drops of this are to be taken every night in a glass of Seltzer water.

2. Distilled water, three ounces and a quarter; cocaine hydrochloride, half a grain; antipyrine, fifteen grains. A teaspoonful may be taken every half hour.

The following procedure, says the writer, in which three solutions are used, has often been employed successfully:

1. Alcohol, a hundred and fifty grains; menthol, eight grains; tincture of nux vomica, thirty grains.

2. Tincture of iodine, a hundred and fifty grains.

3. Saturated chloroform water, three ounces.

Every half hour, or every fifteen minutes if necessary, the patient should take a dessertspoonful of the chloroform water, which may be diluted with iced Seltzer water, after having added ten drops of the first solution to it. If this is not sufficient two drops of the tincture of iodine may be added to each spoonful. Finally, if it is necessary, from two to three drops of a one-in-fifty solution of morphine or cocaine may be added to these formulas. These two solutions are usually employed for subcutaneous injections. It is well to substitute occasionally for one of these medicaments from two to four drops of the ordinary solution of antipyrine for cutaneous injections, according to the following formula: Antipyrine, seventy-five grains; cocaine hydrochloride, two grains and a half; distilled water, a sufficient quantity to make ten cubic centimeters. If these different medications fail, says the writer, the physician may resort to the following therapeutic measure, which is very simple and has been successfully employed by M. Robin in serious cases: Apply a small blister to the pit of the stomach, also administer a small suppository containing a grain and a half of powdered crude opium and a sufficient quantity of cocoa butter once or twice during the twenty-four hours. The vomiting is very often arrested, even if it is the serious vomiting of typhoid fever. Sometimes, also, inhalations of oxygen are useful.—*N. Y. Medical Journal.*

General Infection by the Coli-Bacillus in the Course of Influenza.

Siredey relates the case of a man, æt. 29, who, after suffering for fifteen days from influenza, was admitted with severe general symptoms, including high temperature and very marked albuminuria, the general aspect of the case being such as to suggest that the patient had influenza complicated with enteric fever. There were, however, no rose-spots, diarrhœa, or abdominal distension. After two or three days the signs of uræmia set in, together with an increase in the amount of albumen in the urine. The urine was collected aseptically, and was found to contain a great number of coli-bacilli. Puncture of the spleen furnished a pure cultivation of the same form of organism, and this was likewise found to be present in an effusion in the left side of the chest.

The patient died two days later. There was no lesion of the intestine. Both kidneys were in a condition of intense inflammation, and the left contained white infarcts, in which the bacillus referred to could be again found.—(*Gaz. Méd. de Paris*).

SURGERY.

The Quick Curative Treatment of Gonorrhœa.

Dr. F. A. Lyons, New York, in *Medical Record*, argues that gonorehœa should be aborted. He contends that it is due to the gonococci, and that these should be destroyed as rapidly as possible. His plan is to make the patient urinate. He then injects into the urethra, while the patient is recumbent, with an ordinary conical-shaped soft rubber pointed clap syringe, one drachm of a 4 per cent. solution of nitrate of silver. When the syringe is removed the meatus is compressed for four or five minutes. This operation causes but little pain. When the patient presents himself in twenty-four hours, the discharge is examined carefully for gonococci. If any are found a second injection is given. If none are found, the patient is left till next day. The solution for the second injection should be a 2 per cent. one. If the gonococci have not disappeared by the third injection, it is not well to proceed further, and the treatment should be a symptomatic one. But even where the gonococci did not all disapper, the ultimate course of the disease is greatly shortened.

Metastasis in Bone from Cancer of the Thyroid Gland.

Secondary tumors in cases of cancer of this gland are liable to occur in the lungs and in bones. These secondary growths generally resemble in structure the primary tumor; but, besides typical tumor elements, thyroid glandular tissue is frequently present. This is specially true of adeno carcinomata. Eiselberg relates eight illustrative cases:—(1) Adenoma of thyroid, with colloid degeneration—metastasis in parietal bone; (2) adeno carcinoma of thyroid—metastasis in sternum; (3) adeno-carcinoma—metastasis involving the whole sphenoid bone and the base of the cranium; (4) adeno-carcinoma—metastasis in the parietal eminence; (5) adeno-carcinoma—metastasis in the upper part of the humerus; (6) adeno-carcinoma—metastasis in the lower jaw, the cervical and mediastinal glands, and the lungs; (7) adeno-carcinoma—metastasis in the frontal and occipital bones, the lung and the liver; (8) adeno-carcinoma—metastasis in the cranial bones, the ribs, and the humerus.

In five cases therefore, the bone-metastases were single; in three cases multiple. Pulmonary metastases were diagnosed with certainty in five cases; once there were none; twice they were overlooked. The occurrence of pulmonary metastasis may contra indicate an operation for a single metastasis in bone, for the growth of an osseous metastasis is very slow, and the primary tumor in the thyroid may be so insignificant as to quite escape notice. Eiselberg claims that there are some grounds for believing that a bone metastasis producing colloid material may discharge vicariously the function of the extirpated thyroid gland.—*Deut. Med. Zeit.*

Dr. Welch, the bacteriologist for Johns Hopkins Hospital, has demonstrated that germs will not grow in the immediate vicinity of silver. A sterilized silver wire was introduced into a culture, and while the colonies grew as usual elsewhere, immediately about the wire was free from them. Drs. Halsted and Kelly are making use of this discovery by using silver foil in the dressing of aseptic surgical wounds. The foil is placed immediately in contact with the closed incision in sheets about four inches square, and then the other aseptic dressings are applied.—*College and Clinical Record.*

Treatment of Insomnia in Surgery.

George G. Van Shaick in the *N. Y. Medical Journal* reaches the following conclusions on this subject:

1. Insomnia from whatever cause is an important complication of surgical disorders.
2. Its relief is necessary to the comfort of the patients, improves prognosis and materially assists recovery after operations.
3. Where pain is the chief factor morphine is the only drug that will relieve with certainty.
4. There are many surgical disorders in which insomnia may be relieved by trional; and, finally,
5. Trional is an excellent drug for the purpose, as it acts rapidly and safely, has no inhibitory action upon the secretions, seems to possess a stimulating effect, is well borne by the stomach, is easily absorbed by the rectum and fails to produce unpleasant after-effects.

Van Shaick gives a 15 gr. dose, to be repeated in one hour if necessary, and directs attention to the importance of relieving the insomnia which so many patients suffer for a few days in anticipation of an operation.

A Case of Acute Miliary Carcinosis.

Our acquaintance with cancer is so much restricted to the chronic disease that we are apt to forget that it may be associated with feverish attacks, run a rapid course like an acute disease, and prove fatal with cerebral and other grave symptoms in a week or two. The writer (Megay of Klausenburg) suggests the designation given above, in view of the close resemblance of such cases to acute miliary tuberculosis.

He mentions the case of a woman, aged 54, who was brought into hospital in a state of fever, and died on the following day before any exact diagnosis was arrived at. The autopsy revealed the presence of an old hard scirrhus of the pylorus, but the numerous secondary tumors corresponded in structure to medullary cancer. These were found in the lymph-glands of the neck and abdomen, the serous membrane, and the spleen, liver, and kidneys. Death, therefore, was due not to the primary tumor, but to the numerous metastases, which developed rapidly, and were associated with fever and typhoid symptoms. The cancer-cells were supposed to have reached the blood by penetrating the thin walls of the delicate blood-vessels of the lymphatic glands. Indeed, the writer actually observed a small vessel in a glandular mass in the neck, half filled with epithelium which had grown into it. The same thing may have happened in a number of places. The resemblance, therefore, between this mode of generalization of cancer and acute miliary tuberculosis is very close.—*Deut. Med. Zeit.*

Fistula in Ano.

In doing a radical operation for fistula the following points, according to Dr. J. H. Bacon, should be observed:

1. Never sever the sphincters at more than one place at the same operation, no matter what the complications may be, otherwise incontinence is sure to follow.
2. Unless all the channels are followed up and laid open, the operation will fail of its purpose.
3. Fistula resulting from tubercular abscess must not be operated upon if there is sufficient tissue destruction of lung to produce hectic, fever, sweats, etc., unless the fistula is causing severe painful spasms of the sphincters, then it should be divided at any stage.
4. After laying the fistula tract open, the wound must be made to heal from the bottom, and as the cutaneous or mucous side of the wound is better nourished it will throw out a more healthy granulation, that tends to bridge over and close the slower granular surface at the bottom, thus leaving a fistula remaining.
5. When the fistulous tract is not too complicated it should be dissected out entire and the wound brought together, beginning at the bottom with continuous catgut sutures and approximating the surfaces in successive layers until the whole wound is closed.—*Northw. Med. Jour.*